AUTHOR INDEX FOR VOLUME 46, 1978

A

Absher, C. W., 977
Addis, P. B., 102
Aherne, F. X., 391
Albert, W. W., 1666
Allen, C. W., 1626, 1634
Allen, R. J., Jr., 1103
Almquist, J. O., 225
Ammerman, C. B., 1091
Amos, H. E., 778
Andersen, J. G., 1
Anderson, D. B., 102
Anderson, D. C., 362, 787, 849
Anderson, G. B., 449
Anfinson, M. S., 1724
Annapureddy, R., 584
Anthony, H. D., 1759
Anthony, W. B., 32
Armstrong, W. D., 1685
Atinmo, Tola, 409

B

Baile, C. A., 1356
Baker, D. H., 1287
Bakker, H., 1563, 1572
Balasko, J. A., 1493, 1503
Baldijao, Carlos, 409
Barrington, G. P., 278
Barron, D. H., 167, 175
Bartlett, E. T., 811
Bartley, E. E., 1759
Bayley, H. S., 1800
Beal, W. E., 181
Bechtle, R. M., 1759
Becker, S. P., 83
Beermann, D. H., 125
Beeson, W. M., 562, 983
Bellows, R. A., 181, 1522
Belyea, R. L., 320, 873
Benevenga, N. J., 1648, 1658
Bengtsson, G., 143, 153, 1001
Bennett, R. C., 873
Bereskin, B., 992, 1581
Berg, R. T., 1151
Bergen, W. G., 417
Berry, B. W., 658
Bidner, T. D., 1592
Bierschwal, C. J., 719
Birth, G. S., 634
Bitman, J., 232
Black, L. T., 484
Blockey, M. A. deB., 589
Bogart, R., 458
Boling, J. A., 345, 350, 535
Bothast, R. J., 484
Botkin, M. P., 1147
Bowling, R. A., 333
Bowman, T. A., 1063
Bradley, N. W., 345, 350, 535
Brady, P. S., 1515
Brinks, J. S., 48, 54
Briscoe, J. P., 1018
Britton, R. A., 1738
Brower, G. R., 26
Brown, M. A., 614
Brown, W. L., 646
Burfening, P. J., 922, 930, 957
Burke, D. J., 1666
Butcher, R. L., 1718
Butendieck, N., 1293
Butler, O. D., 333
Butts, W. T., Jr., 1096
Byers, F., 541

C

Cady, R. A., 950
Call, E. P., 443
Carpenter, J. A., Jr., 370
Carpenter, Z. L., 333, 1221, 1229, 1618
Carr, T. R., 651
Carroll, F. D., 1201
Cartwright, T. C., 370
Cassens, R. G., 125
Caswell, L. F., 547
Caton, D., 167, 175
Caudle, A. B., 719
Chapman, Hollis D., 341, 1159
Chen, C. P., 573, 578
Chew, B. P., 1316
Christenson, R. K., 189, 201, 211
Christian, L. Edward, 699
Clark, J. C., 965
Clark, J. H., 1120
Clark, J. L., 320
Clark, T. L., 692
Clawson, A. J., 1685
Clawson, W. J., 811
Cole, Russell S., 219
Coleman, S. W., 1103
Colling, D. P., 1738
Conley, H. H., 1300
Cooper, B. S., 1300
Copelin, J. L., 133
Cordray, J. C., 666
Corgin, James E., 1287
Cornelius, S. G., 674
Crawford, D. F., 32
Crawford, R. J., Jr., 1768
Crenshaw, T. D., 1024, 1275
Crickenberger, R. G., 1748
Crockett, J. R., 1163, 1170
Cromwell, G. L., 692, 884
Crooker, B. A., 1768
Cross, H. R., 761
Crouse, J. D., 255, 1178
Cundiff, Larry V., 892, 908, 1178, 1529, 1539, 1552
Cunningham, P. J., 937, 1024, 1275
Cupps, P. T., 449
Curtis, Stanley E., 356

D

Dartt, R. M., 345
Davey, R. J., 992, 1581
Davis, Carl E., 376, 634, 639 646
Davis, C. L., 1120
Davis, D. L., 1043
Davis, G. W., 1618
Davis, S. L., 699, 1724
Day, B. N., 1043
Dennis, S. M., 1759
DeWitt, D. L., 1597
Dias, J. A., 1707
Dickerson, G. E., 1529, 1539
Dikeman, Michael E., 96
Dinius, D. A., 732, 761
Dinkel, C. A., 614
Dorn, Cecelia, 1780
Doyle, J. C., 1346
Drewry, K. J., 83
Drost, M., 449
Dryden, F. D., 1332, 1338
Dunn, T. G., 181
Dutson, T. R., 1212
Dutt, R. H., 884

E

Early, Richard J., 787
Easley, J. F., 746
Echternkamp, S. E., 1054
Edwards, Ned C., Jr., 341, 1159
Elizondo, G., 102
Elliot, J. M., 304
Elliott, F. C., 417
Ellis, E. B., 1113
Elmore, R. G., 719
El-Negoumy, A. M., 161
Ely, L. O., 867
England, D. C., 1694
Enser, M. B., 618
Erb, R. E., 1316
Erickson, J. P., 417
Eslick, R. F., 161
Evans, D. W., 1351
Evans, Essi, 520, 527
Evans, J. J., 778
Everson, Dale O., 699
Ewan, R. C., 391, 402

F

Fernandes, L. C., 443
Ferrell, C. L., 255
Fick, K. R., 1091
Fina, L. R., 1759
Fitzhugh, H. A., Jr., 370, 797
Flowerday, Dale, 1024
Fogwell, R. L., 1718
Fontenot, J. P., 547, 726
Foote, R. H., 1293
Ford, J. J., 1054
Ford, S. P., 1701
Fox, D. G., 1748
Franke, D. E., 1163, 1170
Freund, R. J., 1618
Friedrich, R. L., 922, 930
Frobish, L. T., 678

G

Gallion, S. R., 977
Galyean, M. L., 9, 249
Gann, G. L., 1212
Gardner, William, J., Sr., 219
Garverick, H. A., 719
Gary, R. Evans, 819
Gaskins, C. T., 133
Gay, N., 350
Gengenbach, D. R., 1293
George, P. B., 1694
Gilbert, G. R., 225
Climp, Hudson, 255
Goering, H. K., 761
Gregory, Keith E., 892, 908, 1178, 1529, 1539, 1552
Griffin, D. D., 562
Griffin, F. M., 1009
Gross, S. J., 1
Grummer, R. H., 1648, 1658
Gupta, B. S., 1086, 1326

H

Hafs, H. D., 436, 1066
Hakkarainen, J., 143, 153, 1001
Hale, W. H., 1332
Hansard, S. L., II, 1091
Hanson, T. L., 1780
Harmon, G. B., 674
Harpster, H. W., 238
Harrell, R. A., 1592
Harris, R. R., 32
Harrison, Virden L., 807
Hatfield, E. E., 288, 484, 490, 740
Hausman, G. J., 125
Hawk, H. W., 1300
Hays, V. W., 692, 884
Hedrick, H. B., 965
Hegarty, P. V. J., 1634
Hembry, F. G., 271
Henderson, C. R., 1125
Henderson, D. C., 1236
Henneman, H. A., 1515
Henricks, D. M., 1309
Hill, J. R., Jr., 1309
Hill, R. R., Jr., 1641
Hillers, J. K., 1063
Hinds, F. C., 1086
Hintz, H. F., 1803
Hintz, R. L., 60
Hitchcock, U. P., 425
Hohenboken, William, 19
Holloway, J. W., 1096
Holmes, W., 297
Hood, R. L., 1626
Hoover, William H., 1768, 1789
Hopper, J. T., 1096
Horton, G. M. J., 297
Horton, M. B., 449
Houpt, Katherine A., 409
Huffman, D. L., 666
Hull, J. L., 878
Hurst, J. P., 278
Hutcheson, D. P., 1267

I

Icaza, E. A., 1592
Inskeep, E. K., 1718

J

Jennings, T. G., 658
Jensen, A. H., 674
Jewell, Dennis E., 1658
Johnson, D. E., 1086, 1326
Johnson, R. K., 9, 69
Johnson, R. R., 249
Johnson, W. M., 573, 578
Jones, H. E., Jr., 971
Jones, S. D. M., 1151
Jonsson, L., 143, 153, 1001
Jorgensen, N. A., 278
Joseph, A. J., 658

K

Kahl, S., 232
Kaltenbach, C. C., 181
Kauffman, R. G., 41, 1236
Kay, Ronald D., 823
Keahey, K. K., 425, 8378
Kehr, W. R., 1780
Keller, D. G., 48, 54
Kelley, Keith W., 356
Kendall, W. A., 1641
Kesler, D. J., 719
Kilgour, R., 1478
Kim, Kiju-Il, 1648, 1658
Kiracofe, G. H., 26
Kirkham, W. W., 983
Kirtland, D., 686
Kiser, T. E., 436
Klindt, J., 1724
Klopfenstein, T. J., 499, 841, 1738, 1780
Koenig, S. E., 490
Koger, L. M., 1063
Koger, M., 1163, 1170
Kohler, G. O., 732
Kohlmeier, R. H., 255
Krabill, L. F., 1356
Kraeling, Robert R., 453, 707
Kratzer, D. D., 884
Krause, Vernon, 499
Kress, D. D., 922, 930, 957
Kromann, R. P., 1351
Krug, J. L., 884

L

Lang, R. L., 1147
Lannek, N., 143, 153, 1001
Laster, D. B., 892, 908
Leander, R. C., 965
Levine, Joel M., 19
Lewis, G. S., 1718
Lichtenwalner, R. E., 1113
Light, M. R., 1515
Lillie, R. J., 678
Lindahl, I. L., 479
Lindberg, P., 143, 153, 1001
Lindner, Gary M., 711
Linnerud, A. C., 1685
Lipsey, R. Jerry, 96
Lister, David, 618
Lochner, J. V., 1236
Long, T. A., 238
Lopez de Torre, Guillermo, 604
Louis, T. M., 436, 1066
Lunstra, D. D., 1054
Lyon, C. K., 732

M

MacLeod, G. K., 527
McAllister, A. J., 1125
McCampbell, H. C., 376, 646, 1009, 1018
McCartor, M. M., 769
McCormick, C. C., 1493
McCormick, J. W., 350
McCormick, W. C., 1776
McCullough, M. E., 867
McGuire, J. A., 666
Madero, C., 102
Magee, W. T., 1515, 1748
Mahan, D. C., 384
Makarechian, M., 1610
Marchello, J. A., 1338
Marple, D. N., 102
Marten, Gorden C., 1470
Martin, Everett L., 362
Martin, T. G., 83
Martz, F. A., 320, 873
Mata-Hernandez, A., 1332, 1338
Matches, A. G., 965
Melton, A. A., 370
Merkel, Robert A., 1212, 1241
Miller, E. R., 417, 425
Miller, S. M., 1091
Miller, Timothy R., 1241
Milvae, R. A., 436

Moody, W. G., 618
Moore, J. E., 1103
Moran, E. T., Jr., 520, 527
Morrison, E. G., 341, 1159
Moser, B. D., 1024, 1275
Moxon, A. L., 384
Munson, A. W., 1610
Murray, Finnie A., 1730

N

Nagaraja, T. G., 1759
Nelson, L. A., 83
Neri-Flores, O., 1103
Newman, C. W., 161
Niswender, G. D., 1071
Notter, David R., 892, 908
NRC-Committee, 1673
Nunn, T. R., 957

O

Ogden, R. L., 1780
Ohlson, D. L., 1724
Okai, D. B., 391
Oldfield, J. E., 515
Olson, L. W., 1529, 1539, 1552
Oltenacu, E. B., 1293
Oltjen, R. R., 761
O'Mary, Clayton C., 362
Omtvedt, I. T., 69
Owens, F. N., 249
Oxender, W. D., 436

P

Padgett, D. G., 746
Pals, D. A., 402
Papas, Andreas, 288
Pearson, A. M., 1212
Pell, E. W., 596
Pendulum, L. C., 350, 535
Peo, E. R., Jr., 1024, 1275
Perry, T. W., 562
Peterson, R. C., 562
Phillips, R., 19
Phillips, W. A., 726
Pilbeam, Thomas E., 219
Plotka, E. D., 102
Politiek, R. D., 1572
Pollak, E. J., 1
Pond, W. G., 409, 686
Powell, Karen, 1493, 1503
Powers, N. C., 1201
Prange, R. W., 1120
Preston, R. L., 541
Price, M. A., 1151
Prigge, E. C., 249
Prior, R. L., 189, 201, 211
Puglisi, Tony A., 707
Pumfrey, R. A., 937

R

Raguse, C. A., 878
Rampacek, George B., 453, 707
Ramsey, C. B., 971
Randel, R. D., 769, 1316
Rankin, Bobby G., 604
Rao, D. R., 573, 578, 584
Reddish, R. L., 333
Reeves, J. J., 1707
Reid, R. L., 1493, 1503
Rempel, W. E., 102
Rerat, A., 1808
Restall, D. J., 618
Reynolds, P. J., 732
Rexroad, Caird E., Jr., 1037
Rhodes, R. C., III, 769
Richardson, C. R., 740
Rickard, T. R. 304
Ricketts, R. E., 873
Rick, P. M., 1293
Riggs, J. K., 333
Rivera, E. R., 1685
Rivera, L., Pedro H., 1024, 1275
Rollins, W. C., 1201
Roman-Ponce, H., 167, 175
Rooney, L. W., 1113
Rouquette, F. M., Jr., 1316
Ruehlow, R. R., 873
Rumsey, T. S., 238, 463
Russell, J. R., 278

S

Savell, J. W., 1221
Schalles, Robert R., 96
Schmidt, M. K., 1250, 1259, 1267
Schryver, H. F., 1803
Scipioni, R. L., 1293
Seerley, R. W., 1009, 1018
Segerson, Edward C., Jr., 1730
Seidel, G. E., Jr., 1730
Seidel, G. E., Jr., 1071
Senger, P. L., 1063
Shaffer, Shannon J., 1712
Shell, L. A., 1332, 1338
Shelton, Maurice, 1229
Shenk, J. S., 1641
Sherry, M. P., 1250, 1259, 1267
Shirley, R. L., 746
Short, R. E., 181, 1522
Siers, D. G., 1694
Sigler, D. H., 971
Simms, D. D., 458
Sisk, R. L., 867
Smith, A. M., 309
Smith, G. C., 333, 1178, 1221, 1229, 1618
Smith, Gerald M., 807, 892, 908, 1178
Smith, L. W., 478
Sniffen, C. J., 1768
Spears, J. W., 490
Spitzer, J. C., 1071
Staigmiller, R. B., 181
Stanton, H. C., 1694
Steen, W. Wade, 350
Stellflug, J. N., 1066
Stevens, C. E., 1803
Stevens, K. R., 541
Stormshak, F., 1701
Stouffer, J. R., 1206
Stringer, W. C., 965
Sudweeks, E. M., 867
Sunki, Gopal Reddy, 573, 578 584
Swanson, L. V., 458
Swatland, H. J., 113, 118
Swingle, R. S., 1346

T

Teeter, G. Robert, 1287
Thatcher, W. W., 167, 175, 443
Thayne, W. V., 596
Thiessen, R. B., 1201
Thomas, R. C., 370
Thompson, G. B., 965
Thong, L. I., 674
Thrift, F. A., 977
Tilton, J. E., 1515
Topel, David G., 1597, 1604
Torell, D. T., 1
Townsend, W. E., 376, 634, 639, 646
Travis, Hugh F., 219
Trenkle, Allen, 1597, 1604
Tribble, L. F., 133, 971
Turner, E. M., Jr., 527

U

Ullrey, D. E., 425, 1515
Urias, A. R., 1346
Utley, P. R., 1776

V

Vaniman, D., 922, 930, 957
Van Vleck, L. D., 60, 950
Vavra, M., 19
Veum, T. L., 1250, 1259, 1267
Voight, R. L., 1346

W

Wachholz, D., 1236
Wagner, D. G., 9, 249
Walker, E. F., Jr., 686
Walker, J. P., 520
Wallinga, J. H., 1563, 1572
Walters, L. E., 69, 651, 1610
Wangsness, P. J., 1356
Ward, Gerald M., 1078
Ward, J. K., 831
Webb, K. E., Jr., 547, 726
Weems, C. W., 1718
Welch, J. G., 309
Westervelt, R. G., 1206
Weswig, P. H., 515

Whanger, P. D., 515
Whetter, P. A., 1515
White, T. W., 271
Whiteman, J. V., 651, 1610
Whitson, Robert E., 823
Wilcox, C. J., 167, 175, 443
Wilson, L. L., 238, 484
Wilson, T. R., 1351
Wiltbank, J. M., 1071
Wood, J. D., 618
Wright, R. W., Jr., 449, 711, 1712
Wright, Sewall, 1192
Wyllie, D., 391

Y

Yoakam, S. C., 983
Young, A. W., 41, 320, 505
Young, Johnny M., 1159
Young, L. D., 937, 1178
Young, Ronald B., 1241
Young, R. D., 320
Youngquist, R. S., 719
Yu Yu, 313

Z

Zimmerman, Dwane R., 937

SUBJECT INDEX FOR VOLUME 46, 1978

A

Absorption, digestion and
  In the hindgut of ruminants, 1789
Absorption studies
  Isolation of segments of the jejunum and ileum for, using double reentrant cannulae in sheep, 726
Actinomycin D, blockage by
  Of estradiol-17β-induced uterine contractions in ewes, 1037
Age and quality level, effect of
  On the palatability of goat meat, 1229
Age, nutrition and genotype, influence of
  On carcass traits and cellular development of the *M. longissimus* of cattle, 1597
Aging, length of
  Influence of fat thickness, marbling and, on beef palatability and shelf-life characteristics, 658
Argonomic data for five varieties of alfalfa hay
  Nutrient digestibility, digestible energy and metabolizable energy and, 1351
Alfalfa, effects of dehydrated
  In vitro studies of dried alfalfa and complementary, and urea in ruminant rations, 499
Alfalfa, field wilted and direct cut dehydrated
  As protein sources for growing beef cattle, 1780
Alfalfa hay, five varieties of
  Nutrient digestibility, digestible energy and metabolizable energy and agronomic data for, 1351
Alfalfa, *in vitro* studies of dried
  And complementary effects of dehydrated alfalfa and urea in ruminant rations, 499
Alfalfa meal, formaldehyde treated dehydrated
  Performance of lambs fed rations containing, 732
α-tocopherol levels, varying
  Requirement for selenium (as selenite) and vitamin E (as α-tocopherol) in weaned pigs. I. The effect of, in a selenium deficient diet on the development of the VESD syndrome, 143
Amino acids
  Replacing soy protein in swine diets with high-protein and, 161
Amino acid availability
  Effect of maturity and drying temperature on nutritional quality and, of normal and *opaque-2* corn for rats and swine, 1024
Amino acids, nutritional quality and availability of
  Effect of drying temperature on, in normal and *opaque-2* corn for rats, 1275
Amino acids, the limiting
  In growing cattle, 740
Ammonia release, *in vitro* ruminal
  Effect of complexing sodium bentonite with soybean meal or urea on, and nitrogen utilization in ruminants, 1738
Androstenedione secretion in bulls
  Comparison of testosterone and, given prostaglandin $F_{2\alpha}$ or luteinizing hormone, 436
Angus and Hereford cows
  Limousin and Simmental sires mated with, 341
Angus, crossing
  And milking shorthorn cattle: Calf performance to weaning, 83
Animal behavior, the application of
  And humane care of farm animals, 1478
Animal, omnivorous monogastric
  Digestion and absorption of carbohydrates and nitrogenous matters in the hindgut of the, 1808
Animal performance and microbial adaptation of ruminants
  Fed formaldehyde treated poultry waste, 490
Animal-plant complex, the
  In forage palatability phenomena, 1470
Animal safety issues, human and
  Antibiotics in animal feeds, 1360
Animals, farm
  The application of animal behavior and the humane care of, 1478
Animals, grass and grain-fed
  Characteristics of bovine *longissimus* and *semitendinosus* muscles from, 965
Antibiotic, influence of type of
  And length of antibiotic feeding period on performance and persistence of antibiotic resistant enteric bacteria in growing-finishing swine, 1383
Antibiotics
  In animal feeds in Great Britain, 1425
  The mode of growth promotion by, 1447
Antibiotics, dietary
  Effect of lactation length and, on reproductive performance of sows, 884
Antibiotics in animal feeds
  Human and animal safety issues, 1360
Antibiotics in animal feeds, subtherapeutic levels of
  Public health concerns relative to the use of, 1413
Arginine or glucose infusion
  Plasma levels of growth hormone and insulin in protein malnourished *vs* normal growing pigs in response to, 409
Arsanilic acid and vitamin E, effects of
  Upon utilization of natural or supplemental selenium by swine, 425

B

Bacteria, antibiotic resistant enteric
  Influence of chlortetracycline in swine feed on reproductive performance and on incidence and persistence of, 1369
Bacteria in growing-finishing swine, antibiotic resistant enteric
  Influence of type of antibiotic and length of antibiotic feeding period on performance and persistence of, 1383
Bacterial resistance, the spread of
  The effect of tetracycline upon the, from calves to man, 1437

Barley, high protein
Replacing soy protein in swine diets with and amino acids, 161
Beef bulls, puberty in
Growth, hormone levels, testicular development, sperm production and sexual aggressiveness in bulls of different breeds, 1054
Beef calves, West Virginia
Factors influencing weaning weight and grade of, 596
Beef cattle, compensatory growth by
At grassland or on an alfalfa-based diet, 297
Beef cattle
Breed of sire and dam comparisons for preweaning traits under commercial, conditions, 977
Individual heterosis for postweaning growth efficiency in, 1529
Beef cattle forage systems analysis
Under variable prices and forage conditions, 819
Beef cattle, growing
Field wilted and direct cut dehydrated alfalfa as protein sources for, 1780
Beef cattle production systems
Use of cereal residues in, 849
Beef cattle, production traits in
Region by sire interaction for, 957
Beef cattle, rotational crossbreeding of
Preweaning traits by generation, 1163
Reproduction by generation, 1170
Beef, comparison of
From normal cattle and heteroxygous cattle for muscular hypertrophy, 1201
Beef cow forage systems
Utilization of corn and grain sorghum residues in, 831
Beef, evaluation of
From steers fed grain, corn silage of haylage-corn silage diets, 41
Beef heifers
Fertilization and blood levels of progesterone and LH in, on a restricted energy diet, 1071
Beef heifers, induced luteal regression in
Secretion of steroids after: Effects of $PGF_{2\alpha}$ and removal of corpora lutea, 1718
Beef heifers, irrigated pasture for
To be bred as yearlings, 878
Beef palatability
Influence of fat thickness, marbling and length of aging on, and shelf-life characteristics, 658
Beef steers, finishing
On forage diets with additives and supplemental lipid, 761
Beef tenderness
Effect of altered muscle pH on, 1592
Bioeconomic analysis
Of ruminant production systems, 797
Biological types of cattle, characterization of
VI. Transmitted and maternal effects on birth and survival traits in progeny of young cows, 892
VII. Milk production in young cows and transmitted and maternal effects on preweaning growth of progeny, 908
Biquinolate as a feed additive
In cattle finishing diets, 1776
Bird-susceptible and bird-resistant sorghum grain
Influence of roughage on the digestibility of steer rations containing, 271
Birth weight, calving difficulty and subsequent fertility
Effects of precalving feed level on, 1522
Blastocyst formation by pig eggs
Cleavage and, *in vitro*, 1043
Blastocyst *in vitro*, swine
Attachment and trophoblastic outgrowth of, 1712
Blood flow, uterine
Thermal stress effects on, in dairy cows, 175
Blood serum selenium levels, relationship of
Of pregnant cows to low dietary intake, and effect on tissue selenium levels of their calves, 562
Blood, whole cattle
Nutrient digestibility in diets fed steers in which, was substituted for peanut meal on a protein basis, 746
Body weight, feed efficiency and mortality
Effect of weaning and slaughter ages upon rabbit meat production, I., 573
Body weight of mice
Reproduction and, after long-term selection for large litter size, 1572
Bovine pituitary and luteal function
Influence of dietary energy intake on, 181
Bovine sternomandibularis muscle
Glycogen phosphorylase and branching enzyme activity in red and white myofibers of, 113
Brahman-Hereford cows, first-cross
Effects of dietary monensin and sex of calf on profiles of serum progesterone and estrogen in late pregnancy of, 1316
Breeding livestock
The relation of, to theories of evolution, 1192
Breed of sire
And dam comparisons for preweaning traits under commercial beef cattle conditions, 977
Broiler litter ensiled at different moisture levels
Fermentation and utilization of, 547
Broiler litter, fermentation and utilization of,
Ensiled at different moisture levels, 547
Bulls given prostaglandin $F_{2\alpha}$ or luteinizing hormone
Comparison of testosterone and androstendione secretion in, 436
Bulls, serving capacity of
The influence of, on herd fertility, 589
Bulls, sexual aggressiveness in
Puberty in beef bulls: Growth, hormone levels, testicular development, sperm production and, of different breeds, 1054

C

Calcium chloride injections, intraepididymal
Blockage of sperm transport using, in rams, 1063
Calf performance to weaning
Crossing Angus and milking Shorthorn cattle, 83
Calorie ratios, dietary protein to
And fat sources for neonatal pigs reared artifically with subsequent performance
I. Performance, 1259
II. Serum variables, 1267
Calves
Relationship of blood serum selenium levels of pregnant cows to low dietary intake, and effect on tissue selenium levels on their, 562

Calves, Angus, Holstein, Simmental and Chianina sired
Birth, preweaning and postweaning traits of, 362
Calves, fed corn silage, growing
Continuous and noncontinuous protein levels for, 535
Calving difficulty and subsequent fertility
Effects of precalving feed level on birth weight, 1522
Calving ease and growth rate of Simmental sired calves
I. Factors affecting calving ease and growth rate, 922
II. Genetic parameter estimates, 930
Cannulae in sheep, reentrant
Isolation of segments of the jejunum and ileum for absorption studies using double, 726
Carbohydrates and nitrogenous matters
Digestion and absorption of, in the hindgut of the omnivorous monogastric animal, 1808
Carbohydrates, utilization of
Regulation of intake and, by meadow voles, 1641
Carcass chemical composition and organ weights of market swine
Genetic and nutritional effects on, 992
Carcass composition
Of different cattle types related to energy efficiency, 96
Carcass composition changes
Relation of ^{40}K count and probe to, in growing and finishing swine, 651
Carcass composition of cattle
Relationships of some endocrine measurements to growth and, 1604
Carcass composition in lambs
Relationships between growth rate, dressing percentage and, 1610
Carcass density, a review of
Its measurement and relationship with bovine carcass fatness, 1151
Carcass fatness, bovine
A review of carcass density, its measurement and relationship with, 1151
Carcass traits and cellular development
Influence of age, nutrition and genotype on, of the *M. longissimus* of cattle, 1597
Carcasses, light-weight beef
Effect of electrical stimulation on quality and palatability of, 1221
Carcass, porcine
Relationships among spinal cord severing, electrical stimulation and postmortem quality characteristics of the, 1206
Carcass quality and composition
Effect of weaning and slaughter ages on rabbit meat production. II., 578
Carcass traits in beef cattle
Maternal heterosis effects on postweaning growth and, 1552
Carcass traits of three-way cross steers
Characterization of biological types of cattle. VIII. Postweaning growth and, 1178
Carcass traits, pig
Genetic, sex and diet effects on, 1581
Cat, the
Methionine essentiality for, 1287
Cattle, beef
Compensatory growth by, at grassland or on an alfalfa-based diet, 297
Cattle, cell-free rumen fluid of
Quantitation of endotoxin in, 1759
Cattle, characterization of biological types of
VIII. Postweaning growth and carcass traits of three-way cross steers, 1178
Cattle, crossing Angus and milking Shorthorn
Calf performance to weaning, 83
Cattle, dairy
Factors affecting twinning and effects of twinning in, 950
Cattle feed
Evaluation of concentrated hemicellulose extract as, 32
Cattle finishing diets
Biquinolate as a feed additive in, 1776
Cattle, growth and carcass composition of
Relationships of some endocrine measurements to, 1604
Cattle, growing
The limiting amino acids in, 740
Cattle, Hereford
Inbreeding by environmental interactions for weaning weight in, 48
Mating system by environmental interactions for weaning weight in, 54
Cattle, normal and heterozygous
Comparison of beef from, for muscular hypertrophy, 1201
Cattle size and protein level, effect of
On the utilization of high corn silage or high grain rations, 1748
Cattle, the *M. longissimus* of
Influence of age, nutrition and genotype on carcass traits and cellular development of, 1597
Cattle types, different
Carcass composition of, related to energy efficiency, 96
Cecum and colon of pigs, the
The fraction of dietary lactose available for fermentation in, 1658
Lactase activity and VFA production in, fed a corn-soy or 40% whey diet, 1648
Cellular development of the *M. longissimus* of cattle
Influence of age, nutrition and genotype on carcass traits and, 1597
Cereal residues, use of
In beef cattle production systems, 849
Changes in ground rabbit meat
Microbial, biochemical and organoleptic, stored at 5 to 7 C, 584
Characteristics, production, carcass and palatability
Of steers produced by different management systems, 333
Chemical, physical and sensory properties
Comparison of, of loins from Yorkshire, crossbred and wild pigs, 646
Chemical treatment
Of crop residues, 841
Chickens, *Escherichia coli* infection in
Effect of low level chlortetracycline feeding on subsequent therapy of, 1397
Chops, microwave and conventional reheating of
From precooked hot and cold processed pork loin roasts, 971
Chlortetracycline feeding, effect of low level
On subsequent therapy of *Escherichia coli* infection in chickens, 1397

Chlortetracycline, in swine feed, influence of
On reproductive performance and on incidence and persistence of antibiotic resistant enteric bacteria, 1369
Chromium sesquioxide excretion patterns
Animal variation in, of grazing cows, 1096
Cleavage and blastocyst formation
By pig eggs *in vitro*, 1043
Clonal analysis of satellite cells
In growing mice, 1241
Coefficient, the scatter
As a measure of pork quality, 639
Colon of pigs
The fraction of dietary lactose available for fermentation in the cecum and, 1658
Lactase activity and VFA production in the cecum and, fed a corn-soy or 40% whey diet, 1648
Commercial beef cattle conditions
Breed of sire and dam comparisons for preweaning traits under, 977
Components, principal
For cow size and shape, 370
Composition, carcass quality and
Effect of weaning and slaughter ages on rabbit meat production. II., 578
Copper and iron supplements, effect of
On performance and hematology of confined sows and their progeny through four reproductive cycles, 678
Copper stores of pigs
Effects of copper sulfate, copper sulfide and sodium sulfide on performance and, 692
Copper sulfate, copper sulfide and sodium sulfide, effects of
On performance and copper stores of pigs, 692
Corn and grain sorghum residues
Utilization of, in beef cow forage systems, 831
Corn-corn silage rations
Supplemental protein withdrawal from,: Effect of weight and corn intake at withdrawal, 505
Corn, high moisture
Methylene-*bis*-propionate preservation of, 484
Corn, normal and *opaque-2*
Effect of drying temperature on nutritional quality and availability of amino acids in, 1275
Effect of maturity and drying temperature on nutritional quality and amino acid availability of, for rats and swine, 1024
Corn silage
Continuous and noncontinuous protein levels for growing calves fed, 535
Corn silage diets
Supplemental protein withdrawal and monensin in, of finishing steers, 345
Corn silage, high
Effect of cattle size and protein level on the utilization of, or high grain rations, 1748
Corn silage or haylage-corn silage diets
Evaluation of beef from steers fed grain, 41
Corn-soy or 40% whey diet
Lactase activity and VFA production in the cecum and colon of pigs fed a, 1648
Corpora lutea, removal of
Secretion of steroids after induced luteal regression in beef heifers: Effects of $PGF_{2\alpha}$ and, 1718
Corpus luteum function
Following subtotal hysterectomy in the prepuberal gilt, 707
Correlations, heritabilities and genetic and phenotypic
For prebreeding traits, reproductive traits and principal components, 937
Cow efficiency
An evaluation of the ratio of calf weight to cow weight as an indicator of, 614
Cow size and shape
Principal components for, 370
Cows, Angus and Hereford
Limousin and Simmental sires mated with, 341
Cows, dairy
LH release in response to GnRH during the postpartum period of, 443
Clinical and endocrine responses of, with ovarian cysts to GnRH and $PGF_{2\alpha}$, 719
Thermal stress effects on uterine blood flow in, 175
Cows, first-cross Brahman-Hereford
Effects of dietary monensin and sex of calf on profiles of serum progesterone and estrogen in late pregnancy of, 1316
Cows, grazing
Animal variation in chromium sesquioxide excretion patterns of, 1096
Cows, Hereford and Brangus
Factors affecting growth curve parameters of, 604
Cows, lactating Angus
Apparent nutrient digestibility by, as related to certain body parameters, 753
Cows, pregnant
Relationship of blood serum selenium levels of, to low dietary intake, and effect on tissue selenium levels of their calves, 562
Cows, progeny of young
Characterication of biological types of cattle. VI. Transmitted and maternal effects on birth and survival traits in, 892
Crop residues
Chemical treatment of, 841
Crossbreeding of beef cattle, rotational
Preweaning traits by generation, 1163
Reproduction by generation, 1170
Crosses in swine, two-breed and three-breed
Comparison of productivity and performance for, 69
Cycles, reproductive
Effect of copper and iron supplements on performance and hematology of confined sows and their progeny through four, 678
Cysts, ovarian
Clinical and endocrine responses of dairy cows with, to GnRH and $PGF_{2\alpha}$, 719

D

Dairy cows
Thermal stress effects on uterine blood flow in, 175
Dairy cows with ovarian cysts
Clinical and endocrine responses of, to GnRH and $PGF_{2\alpha}$, 719
Depot fat composition of lambs
Protein protected fat for ruminants. IV. Plasma lipid, insulin and, 1338
Detergent fiber, protein and mineral content of wheat

forage
In vitro dry matter digestibility, as a dairy cattle feed, 873
Development of swine embryos *in vitro*
Morphological and quantitative aspects of the, 711
Diabetogenic effects of pregnancy in sows
On plasma glucose and insulin release, 1694
Diarrhea, incidence of
Effect of dietary oats and kaolin on performance and, of weanling pigs, 1685
Diethylstilbestrol, influence of testosterone and
Episodic patterns of prolactin and thyrotropin secretion in rams and wethers, 1724
Diet, a low-tocopherol
Requirement for selenium (as selenite) and vitamin E (as α-tocopherol) in weaned pigs: III. The effect on the development of the VESD syndrome of varying selenium levels in, 1001
Diet, alfalfa-based
Compensatory growth by beef cattle at grassland or on an, 297
Diet, an all-concentrate finishing
Effects of dietary sulfur addition and synovex-S ear implants on feedlot steers fed, 463
Diet, control or monensin supplemented
Propionate production in the rumen of Holstein steers fed either a, 1120
Diet, corn-soy or 40% whey
Lactase activity and VFA production in the cecum and colon of pigs fed a, 1648
Diet effects, genetic, sex and
On pig carcass traits, 1581
Diet, influence of practical extremes in
Waste management procedure and stage of production on composition, 520
Dietary Ca and P levels, effect of dietary
From 40 to 100 kg body weight on weight gain and bone and soft tissue mineral concentrations, 686
Dietary lactose available, the fraction of
For fermentation in the cecum and colon of pigs, 1658
Dietary restriction, influence of severe
During the dry period on subsequent ewe productivity, 1147
Diets, cattle finishing
Biquinolate as a feed additive in, 1776
Diets containing corn, soybean meal and milk protein
Performance of neonatal pigslets mechanically fed, 1250
Diets for gestating swine
Distillers dried grains with solubles as a supplemental protein source in, 674
Diets, forage
Finishing beef steers on, with additives and supplemental lipid, 761
Diets, haylage-corn silage
Evaluation of beef from steers fed grain, corn silage or, 41
Diets, nutrient digestibility in
Fed steers in which whole cattle blood was substituted for peanut meal on a protein basis, 746
Diets of swine
Effect of increasing the level of inorganic selenium supplementation in the post-weaning, 384
Diets, swine
Replacing soy protein in, with high-protein barley and amino acids, 161
Digestion and absorption in the hindgut
Of nonruminant herbivores, 1803
Digestibility
Effect of incremental dosages of the waxy gene of sorghum on, 1113
Digestibility and feeding behavior in sheep
Effects of elfazepam on, 1356
Digestibility, apparent nutrient
By lactating Angus cows as related to certain body parameters, 753
Digestibility, gains and
Effect of roasting sorghum and soybeans on, 867
Digestibility, *in vitro* matter
Detergent fiber, protein and mineral content of wheat forage as a dairy cattle feed, 873
Digestibility, nutrient
Digestible energy and metabolizable energy and agronomic data for five varieties of alfalfa hay, 1351
Soybean straw intake and, by sheep, 1086
Digestibility of steer rations
Influence of roughage on the, containing bird-susceptible and bird-resistant sorghum grain, 271
Digestion and absorption
In the hindgut of ruminants, 1789
Digestion and performance of lambs
Protein protected fat for ruminants. III., 1332
Distillers dried grains with solubles
As a supplemental protein source in diets for gestating swine, 674
Dressing percentage and carcass composition
Relationships between growth rate, in lambs, 1610
Dry matter digestibility, *in vitro*
Detergent fiber, protein and mineral content of wheat forage as a dairy cattle feed, 873
Dry period, the
Influence of severe dietary restriction during, on subsequent ewe productivity, 1147

E

Effects, genetic, sex and diet
On pig carcass traits, 1581
Effects, transmitted and maternal
Characterization of biological types of cattle
VI. On birth and survival traits in progeny of young cows, 892
VII. Milk production in young cows and, on preweaning growth of progeny, 908
Elfazepam, effects of
On digestibility and feeding behavior in sheep, 1356
Embryo transfer, bilateral
Induction of twinning in beef heifers by, 449
Embryos, swine
Morphological and quantitative aspects of the development of, *in vitro*, 711
Endocrine measurements, relationships of some
To growth and carcass composition of cattle, 1604
Endotoxin, quantitation of
In cell-free rumen fluid of cattle, 1759
Energy diet, restricted
Fertilization and blood levels of progesterone and LH in beef heifers on a, 1071

Energy, digestible and metabolizable
Nutrient digestibility, and agronomic data for five varieties of alfalfa hay, 1351
Energy efficiency
Carcass composition of different cattle types related to, 96
Energy, efficient use of
Profit, meat production or, in ranching, 811
Energy expenditure in horses
Methods for measuring physical condition and, 1666
Energy for weanling pigs, protein and
An evaluation of several winter selections of triticale as a source of, 417
Energy intake, dietary
Influence of, on bovine pituitary and luteal function, 181
Energy partitioning and nitrogen balance
Of sheep fed soybean straw diets, 1326
Energy source, dietary
For sows and pig fasting influences on pig and milk composition, 1009
Energy, utilization of the
Of dried whey and wheat middlings by young swine, 402
Enzyme activity, branching
Glycogen phosphorylase and in red and white myofibers of bovine sternomandibularis muscle, 113
Epinephrine
Effects of thermal stress and, on uterine blood flow in ewes, 167
Episodic patterns of prolactin and thyrotropin secretion
In rams and wethers: Influence of testosterone and diethylstilbestrol, 1724
Equations, predictive
For estimating protein and fat in the pork carcass, 666
Errata, 328, 569, 1139, 1838
Escherichia coli infection in chickens
Effect of low level chlortetracycline feeding on subsequent therapy of, 1397
Estradiol, exogenous
Number of sperm in the oviducts, uterus and cervix of the mated ewe as affected by, 1309
Estradiol-17β-induced uterine contractions
Blockage by actinomycin D of, in ewes, 1037
Estrogen, effect of
On luteal function in prepuberal gilts, 453
Estrogen, profiles of serum progesterone and
Effects of dietary monensin and sex of calf on, in late pregnancy of first-class Brahman-Hereford cows, 1316
Estrogenic activity and growth stimulation
In steers fed varying protein levels, 541
Evolution, theories of
The relation of livestock breeding to, 1192
Ewe, cervix of the mated
Number of sperm in the oviducts, uterus and cervix of the mated ewe as affected by exogenous estradiol, 1309
Ewe lamb conception
As an indicator of future production in farm flock Columbia and Targhee ewes, 19
Ewe productivity
Influence of severe dietary restriction during the dry period on subsequent, 1147
Ewes, Columbia and Targhee
Ewe lamb conception as an indicator of future production in farm flock, 9
Ewes, late gestation in
Uterine blood flow and nutrient uptake during, with different number of fetuses, 189
Ewes, LHRH ethylamide in
Disappearance of LHRH and D-Leu^6-Des Gly NH_2 10, 1707
Ewes, pregnant and nonpregnant
Insulin and glucose effects on metabolism in, 211
Ewes, uterine blood flow in
Effects of thermal stress and epinephrine on, 167
Ewes, uterine contractions in
Blockage of actinomycin D of estradiol-17β-induced, 1037
Excreta, acceptability of wet
Preservation and, by sheep, 527
Excreta, laying hen
As a ruminant feedstuff. I. Influence of practical extremes in diet, waste management procedure and state of production on composition, 525
As a ruminant feedstuff. II. Preservation and acceptability of wet excreta by sheep, 527
Excreta (LE) dairy cattle
Effects of liquid fraction pressed from, in lamb diets, 478

F

Factors affecting calving ease and growth rate, I.
Calving ease and growth rate of Simmental sired calves, 922
Farm animals, the humane care of
The application of animal behavior and, 1478
Fat and muscle development
Comparison of, in Pietrain and large white piglets, 618
Fat in the pork carcass
Predictive equations for estimating protein and, 666
Fat, poultry and animal
A comparison of, on performance, body composition and tissue lipids of swine, 1018
Fat thickness, influence of
Marbling and length of aging on beef palatability and shelf-life characteristics, 658
Feed additive
Biquinolate as a, in cattle finishing diets, 1776
Feed, dairy cattle
In vitro dry matter digestibility, detergent fiber, protein and mineral content of wheat forage as a, 873
Feed efficiency and mortality, body weight
Effect of weaning and slaughter ages upon rabbit meat production. I., 573
Feeding behavior in sheep
Effects of elfazepam on digestibility and, 1356
Feed level, effects of precalving
On birth weight, calving difficulty and subsequent fertility, 1522
Feedlot performance, predicting
Studies on the feasibility of, from certain laboratory grain analyses, 9
Feedstuff nitrogen in the rumen
Degradation of, *vs* nitrogen solubility in three sol-

vents, 1768
Fermentation in the cecum and colon of pigs
The fraction of dietary lactose available for, 1658
Fertility, herd
The influence of serving capacity of bulls on, 589
Fertility, subsequent
Effects of precalving feed level on birth weight, calving difficulty and, 1522
Fertilization
And blood levels of progesterone and LH in beef heifers on a restricted energy diet, 1071
Fetuses, different number of
Uterine blood flow and nutrient uptake during late gestation in ewes with, 189
Fiber type differentiation
A second look at, in porcine skeletal muscle, 125
Forage conditions
Beef cattle forage systems analysis under variable prices and, 823
Forage diets
Finishing beef steers on, with additives and supplemental lipid, 761
Forage grasses, two sub-tropical
Effect of pelleting and of forage maturity on quality of, 1103
Forage, Kenaf
Chemical composition of, and its digestibility by lambs and *in vitro*, 1346
Forage maturity, effect of pelleting and of
On quality of two-subtropical forage grasses, 1103
Forage palatability phenomena
The animal-plant complex in, 1470
Forage systems analysis, beef cattle
Under variable prices and forage conditions, 819
Foreleg position
Early rigor detection in pork carcasses by, 376
Formaldehyde treated dehydrated alfalfa meal
Performance of lambs fed rations containing, 732
Formaldehyde treated poultry waste
Animal performance and microbial adaptation of ruminants fed, 490

G

Genetic and nutritional effects
On carcass chemical composition and organ weights of market swine, 992
Genetic parameter estimates. II.
Calving ease and growth rate of Simmental sired calves, 930
Genotype, influence of age, nutrition and
On carcass traits and cellular development of the *M. longissimus* of cattle, 1597
Gestation and lactation
Effect of protein level during, on reproductive performance in swine, 1673
Gilts, peripartal sows and
Effects of heat stress on rectal temperature, respiratory rate and activity rates in, 356
Gilt, prepuberal
Corpus luteum function following subtotal hysterectomy in the, 707
Effect of estrogen on luteal function in, 453
Glucocorticoid secretion in heifers
Given prostaglandin $F_{2\alpha}$ triamcinolone acetonide pretreatment, 1066
Glucose effects, insulin and
On glucose metabolism in pregnant and nonpregnant ewes, 201
Glycogen phosphorylase
And branching enzyme activity in red and white myofibers of bovine stern mandibularis muscle, 113
Glycogen reserves
In the fetal and newborn pig, 391
GnRH and $PGF_{2\alpha}$
Clinical and endocrine responses of dairy cows with ovarian cysts to, 719
GnRH, LH release in response to
During the postpartum period of dairy cows, 443
Goat meat, palatability of
Effect of age and quality level on the, 1229
Gonadal hormones and reproduction
Effects of PMSG and $PGF_{2\alpha}$ on, in the beef heifer, 1309
Goats, pygmy
Effect of collection stress on serum growth hormone levels in, 458
Grade, weaning weight and
Factors influencing, of West Virginia beef calves, 596
Grain analyses, laboratory
Studies on the feasibility of predicting feedlot performance from certain, 9
Grain-fed animals
Characteristics of bovine *longissimus* and *semitendinosus* muscles from grass and, 965
Grain rations, high
Effect of cattle size and protein level on the utilization of high corn silage or, 1748
Grass and grain-fed animals
Characteristics of bovine *longissimus* and *semitendinosus* muscles from, 965
Grasses, two sub-tropical forage
Effect of pelleting and of forage maturity on quality of, 1103
Great Britain
Antibiotics in animal feeds in, 1413
Growth and carcass composition of cattle
Relationships of some endocrine measurements to, 1604
Growth and reproductive development
Effect of feeding protein-protected lipid upon, of yearling heifers, 769
Growth, compensatory
By beef cattle at grassland or on an alfalfa-based diet, 297
Growth curve parameters
Factors affecting, of Hereford and Brangus cows, 604
Growth efficiency, postweaning
Individual heterosis for, in beef cattle, 1529
Material heterosis effects on, in beef cattle, 1539
Growth, hormone levels, testicular development
Puberty in beef bulls: sperm production and sexual aggressiveness in bulls of different breeds, 1054
Growth hormone, plasma levels of
And insulin in protein malnourished *vs* normal growing pigs in response to arginine or glucose infusion, 409
Growth hormone, serum
Effect of collection stress on, levels in pygmy goats, 458

Growth in young ponies
Effect of protein level on, 983
Growth, longitudinal
And rate of new sacromere formation in porcine muscle, 118
Growth, postweaning
Characterization of biological types of cattle. VIII. And carcass traits of three-way cross steers, 1178
Maternal heterosis effects on, and carcass traits in beef cattle, 1552
Growth promotion
The mode of, by antibiotics, 1447
Growth rate, dressing percentage and carcass composition
Relationships between, in lambs, 1610
Growth stimulation in steers
Estrogenic activity and, fed varying protein levels, 541

H

Hams, shrinkage of PSE, normal and DFD
During transit and processing, 1236
Heat stress, effects of
On rectal temperature, respiratory rate and activity rates in peripartal sows and gilts, 356
Heifer, beef
Effects of PMSG and $PGF_{2\alpha}$ on gonadal hormones and reproduction in the, 1309
Heifers, dairy
Controlled superovulation in, using prostaglandin $F_{2\alpha}$ and pregnant mare serum gonadotropin, 1293
Heifers, glucocorticoid secretion in
Given prostaglandin $F_{2\alpha}$ after triamcinolone acetonide pretreatment, 1066
Heifers, induction of twinning in beef
By bilateral embryo transfer, 449
Heifers, yearling
Effect of feeding protein-protected lipid upon growth and reproductive development of, 769
Hematology, performance and
Effect of copper and iron supplements on, of confined sows and their progeny through four reproductive cycles, 678
Hemicellulose extract, concentrated
Evaluation of, as cattle feed, 32
Herbage, chemical composition of
Performance of lambs on perennial ryegrass, smooth bromegrass, orchardgrass and tall fescue pastures II. Mineral utilization, *in vitro* digestibility and, 1503
Herbage, digestibility and intake of
Performance of lambs in perennial ryegrass, smooth bromegrass, orchardgrass and tall fescue pasture. I. Live weight changes, 1493
Herbivores, nonruminant
Digestion and absorption in the hindgut of, 1803
Herefords, lifetime productivity of
Differences in, calving first at 2 and 3 years of age, 1159
Heterosis effects, maternal
On postweaning growth efficiency in beef cattle, 1539
On postweaning growth and carcass traits in beef cattle, 1552
Heterosis, individual
For postweaning growth efficiency in beef cattle, 1529
Hindgut, comparative physiology of the
And its nutritional significance, 1800
Hindgut, digestion and absorption in the
Of nonruminant herbivores, 1803
Hindgut of the omnivorous mongastric animal
Digestion and absorption of carbohydrates and nitrogenous matters in the, 1808
Hindgut of ruminants
Digestion and absorption in the, 1789
Holstein steers
Propionate production in the rumen of, fed either a control or monensin supplemented diet, 1120
Hormone secretory spikes
A statistical method for detection of, 699
Horses, energy expenditure in
Methods for measuring physical condition and, 1666
Human and animal safety issues
Antibiotics in animal feeds, 1360
Humane care of farm animals, the
The application of animal behavior and, 1478
Hypocuprosis, molybdenum toxicity and
In ruminants: A review, 1078
Hysterectomy, subtotal
Corpus luteum function following, in the prepuberal gilt, 707

I

Inbreeding by environment interactions
For weaning weight in Hereford cattle, 48
Insulin and depot fat composition of lambs
Protein protected fat for ruminants. IV. Plasma lipid, 1338
Insulin and glucose effects
On glucose metabolism in pregnant and nonpregnant ewes, 201
Insulin, plasma levels of growth hormone and
In protein malnourished *vs* normal growing pigs in response to arginine or glucose infusion, 409
Insulin release, plasma glucose and
Diabetogenic effects of pregnancy in sows on, 1694
Iron supplements, effect of copper and
On performance and hematology of confined sows and their progeny through four reproductive cycles, 678

K

^{40}K count and probe, relation of
To carcass composition changes in growing and finishing swine, 651
Kaolin, effect of dietary oats and
On performance and incidence of diarrhea of weanling pigs, 1685
Kenaf forage, chemical composition of
And its digestibility by lambs and *in vitro*, 1346
Kentucky bluegrass straw
Composition, digestibility and utilization in wintering cow rations, 787

L

Lactase activity and VFA production
In the cecum and colon of pigs fed a corn-soy or 40% whey diet, 1648
Lactation length, effect of
And dietary antibiotics on reproductive performance of sows, 884
Lactose, the fraction of dietary
Available for fermentation in the cecum and colon of pigs, 1658
Lamb diets
Effects of liquid fraction pressed from dairy cattle excreta (LE) in, 478
Lambs
Chemical composition of Kenaf forage and its digestibility by, and *in vitro*, 1346
Protein protected fat for ruminants. IV. Plasma lipid, insulin and depot fat composition of, 1338
Lambs, carcass composition in
Relationships between growth rate, dressing percentage and, 1610
Lambs, digestion and performance of
Protein protected fat for ruminants. III., 1332
Lambs, performance of
Fed rations containing formaldehyde treated dehydrated alfalfa meal, 732
On perennial ryegrass, smooth bromegrass, orchardgrass and tall fescue pasture. I. Live weight changes, digestibility and intake of herbage, 1493
II. Mineral utilization, *in vitro* digestibility and chemical composition of herbage, 1503
Land resource analysis
Systems approach for, and planning of limited renewable natural resources, 819
LH in beef heifers on a restricted energy diet
Fertilization and blood levels of progesterone and, 1071
LH release
In response to GnRH during the postpartum period of dairy cows, 443
LHRH ethylamide in ewes
Disappearance of LHRH and D-LEU^{6}-DES GLY $NH_2{}^{10}$, 1707
L-lysine-HCl polymerized
Abomasal levels of lysine and methionine in wethers fed, and polymerized L-methionine, 778
L-methionine, polymerized
Abomasal levels of lysine and methionine in wethers fed polymerized L-lysine and, 778
Limousin and Simmental sires
Mated with Angus and Hereford cows, 341
Lipid, protein-protected
Effect of feeding, upon growth and reproductive development of yearling heifers, 769
Lipid, supplemental
Finishing beef steers on forage diets with additives and, 761
Lipogenesis
In isolated intramuscular adipose tissue from four bovine muscles, 1626
Liquid fraction, effects of
From dairy cattle excreta (LE) in lamb diets, 478
Litter size
Reproduction and body weight of mice after long-term selection for large, 1572
Litter size in mice
Effect of long-term selection rate for, on lifetime reproduction rate, 1563
Livestock breeding
The relation of, to theories of evolution, 1192
Livestock systems analysis
The future of, 807
Loins, fresh pork
Segmentation of, into quality groups, 1618
Loins, properties of
Comparison of chemical, physical and sensory, from Yorkshire, crossbred and wild pigs, 646
Luteal function in prepuberal gilts
Effect of estrogen on, 453
Luteal regression, induced
Secretion of steroids after, in beef heifers: Effects of $PGF_{2\alpha}$ and removal of corpora lutea, 1718
Luteinizing hormone
Comparison of testosterone and androstenedione secretion in bulls given prostaglandin $F_{2\alpha}$, 436
Lysine and methionine, abomasal levels of
In wethers fed polymerized L-lysine-HCl and polymerized L-methionine, 778
Lysine and threonine, tryptophan
Availability of, in sorghum for swine, 133

M

Management systems, different
Production, carcass and palatability characteristics of steers produced by, 333
Marbling and length of aging
Influence of fat thickness, on beef palatability and shelf-life characteristics, 658
Mare serum gonadotropin, pregnant
Controlled superovulation in dairy heifers using prostaglandin $F_{2\alpha}$ and, 1293
Mastitis in sheep, subclinical
Incidence and importance of, 1
Mating system by environment interactions
For weaning weight in Hereford cattle, 54
Meadow voles
Regulation of intake and utilization of carbohydrates by, 1641
Meat production, profit
Of efficient use of energy in ranching, 811
Metabolism, glucose
Insulin and glucose effects on, in pregnant and non-pregnant ewes, 211
Metabolites, plasma
Effect of monensin on performance and, in growing finishing steers, 350
Methionine essentiality
For the cat, 1287
Methods for measuring physical condition
And energy expenditure in horses, 1666
Methylene-*bis*-propionate preservation
Of high-moisture corn, 484
Metestrus
Bovine ovarian and pituitary response to PMS and GNRH administered during, 1701
Mice, growing
Clonal analysis of satellite cells in, 1241

Mice, reproduction and body weight of
After long-term selection for large litter size, 1572
Microorganisms, ovine rumen
Selenium, sulfur and nitrogen levels in, 515
Microscopy, light and electron
Structural characteristics of porcine skeletal muscle giant myofibers as observed by, 1212
Microwave and conventional reheating of chops
From precooked hot and cold processed pork loin roasts, 971
Milk consumption
Dietary energy source for sows and pig fasting influence on pig and , 1009
Milk production in young cows
Characterization of biological types of cattle. VII. And transmitted and maternal effects of preweaning growth of progeny, 908
Mineral concentrations, bone and soft tissue
Effect of dietary Ca and P levels from 40 to 100 kg body weight on weight and, 686
Models, two-way fixed
The missing subclass problem in, 1125
Moisture levels
Fermentation and utilization of broiler litter ensiled at different, 547
Molybdenum toxicity and hypocuprosis in ruminants: A review, 1078
Monensin, effect of
On performance and plasma metabolites in growing finishing steers, 350
Monensin, effects of dietary
And sex of calf on profiles of serum progesterone and estrogen in late pregnancy of first-cross Braham-Hereford cows, 1316
Monsnsin in corn silage diets
Supplemental protein withdrawal and, of finishing steers, 345
Monensin, supplemented diet
Propionate production in the rumen of Holstein steers fed either a control or, 1120
Mortality, body weight, feed efficiency and
Effect of weaning and slaughter ages upon rabbit meat production. I., 573
Muscle, bovine sternomandibularis
Glycogen phosphorylase and branching enzyme activity in red and white myofibers of, 113
Muscle characteristics
Physiological parameters and, of purebred Pietrain and two specific Pietrain crosses, 102
Muscle development
Comparison of fat and, in Pietrain and large white piglets, 618
Muscles, four bovine
Lipogenesis in isolated intramuscular adipose tissue from, 1626
Muscles in swine and rats, skeletal
Effect of pre-natal runting on the post-natal development of, 1634
Muscle pH, effect of altered
On beef tenderness, 1592
Muscle, porcine
Longitudinal growth and rate of new sarcomere formation in, 118
M. longissimus of cattle, the
Influence of age, nutrition and genotype on carcass traits and cellular development of, 1597
Muscle, porcine skeletal
A second look at fiber type differentiation in, 125
Muscles, bovine *longissimus* and *semitendinosus*
Characteristics of, from grass and grain-fed animals, 965
Muscular hypertrophy
Comparison of beef from normal cattle and heterozygous cattle for, 1201
Myofibers, porcine skeletal muscle giant
Structural characteristics of, as observed by light and electron microscopy, 1212
Myofibers, red and white
Glycogen phosphorylase and branching enzyme activity in, of bovine sternomandibularis muscle, 113

N

Natural resources, limited renewable
Systems approach for land resource analysis and planning of, 819
News and Notes, 328, 569, 862, 1140, 1487, 1809
Nitrogen balance of sheep
Energy partitioning and, fed soybean straw diets, 1326
Nitrogen levels, selenium and sulfur
In ovine rumen microorganisms, 515
Nitrogen solubility in three solvents
Degradation of feedstuff nitrogen in the rumen *vs*, 1768
Nitrogen utilization in ruminants
Effect of complexing soldium bentonite with soybean meal or urea *in vitro* ruminal ammonia release and, 1738
Nutrient digestibility, apparent
By lactating Angus cows as related to certain body parameters, 753
Nutrient digestibility in diets
Fed steers in which whole cattle blood was substituted for peanut meal on a protein basis, 746
Nutrient uptake, uterine blood flow and
During late gestation in ewes with different number of fetuses, 189
Nutrition and genotype, influence of age
On carcass traits and cellular development of the *M. longissimus* of cattle, 1597
Nutritional significance
Comparative physiology of the hindgut and its, 1800
Nitrogenous matters in the hindgut
Digestion and absorption of carbohydrates and, of the omnivorous monogastric animal, 1808

O

Oats and kaolin, deitary
Effect of, on performance and incidence of diarrhea of weanling pigs, 1685
Organ weights of market swine
Genetic and nutritional effects on carcass chemical composition and, 992
Organoleptic changes in ground rabbit meat
Microbial, biochemical and, stored at 5 to 7 C, 584
Ovarian and pituitary responses, bovine

To PMS and GNRH administered during metestrus, 1701
Ovine rumen microorganisms
Selenium, sulfur and nitrogen levels in, 515

P

Pacer, the standardbred
Factors influencing racing performance of the, 60
Palatability of light-weight beef carcasses
Effect of electrical stimulation on quality and, 1221
Palatability phenomena, forage
The animal-plant complex in, 1470
Parameters, certain body
Apparent nutrient digestibility by lactating Angus cows as related to, 753
Parameters, physiological
And muscle characteristics of purebred Pietrain and two specific Pietrain crosses, 102
Pasture, irrigated
For beef heifers to be bred as yearlings, 878
Peanut meal
Nutrient digestibility in diets fed steers in which whole cattle blood was substituted for, on a protein basis, 746
Pelleting, effect of
And of forage maturity on quality of two subtropical forage grasses, 1103
Performance
And vanadium content of tissues in sheep as influenced by dietary vanadium, 1091
Performance, body composition and tissue lipids of swine
A comparison of poultry and animal fat on, 1018
Performance, I.
Dietary protein to calorie ratios and fat sources for neonatal pigs reared artificially with subsequent performance, 1259
Performance, effect of monensin on
And plasma metabolites in growing-finishing steers, 350
Performance of lambs
On perennial ryegrass, smooth bromegrass, orchardgrass and tall fescue pasture. I. Live weight changes, digestibility and intake of herbage, 1493
II. Mineral utilization, *in vitro* digestibility and chemical composition of herbage, 1503
Protein protected fat for ruminants. III., 1332
Performance of neonatal piglets
Mechanically fed diets containing corn, soybean meal and milk protein, 1250
$PGF_{2\alpha}$, and GnRH
Clinical and endocrine responses of dairy cows with ovarian cysts to, 719
$PGF_{2\alpha}$, effects of
Secretion of steroids after induced luteal regression in beef heifers: and removal of corpora lutea, 1718
Physiology of the hindgut, comparative
And its nutritional significance, 1800
Pietrain, purebred
Physiological parameters and muscle characteristics of, and two specific Pietrain crosses, 102
Pig carcass traits
Genetic, sex and diet effects on, 1581
Pig eggs *in vitro*
Cleavage and blastocyst formation by, 1043
Pig fasting influences on pig and milk composition
Dietary energy source for sows and, 1009
Pig, the fetal and newborn
Glycogen reserves in, 391
Piglets, neonatal
Performance of, mechanically fed diets containing corn, soybean meal and milk protein, 1250
Piglets, Pietrain and large white
Comparison of fat and muscle development in, 618
Pigs, copper stores of
Effects of copper sulfate, copper sulfide and sodium sulfide on performance and, 692
Pigs, malnourished *vs* normal growing
Plasma levels of growth hormone and insulin in protein, in response to arginine or glucose infusion, 407
Pigs, neonatal
Dietary protein to calorie ratios and fat sources for, reared artificially with subsequent performance.
I. Performance, 1259
II. Serum variables, 1267
Pigs, the cecum and colon of
The fraction of dietary lactose available for fermentation in, lactace activity and VFA production in, fed a corn-soy or 40% whey diet, 1648
Pigs, weanling
An evaluation of several winter selections of triticale as a source of protein and energy for, 417
Effect of dietary oats and kaolin on performance and incidence of diarrhea of, 1685
Pigs, wild
Comparison of chemical, physical and sensory properties of loins from Yorkshire, crossbred, 646
Pituitary and luteal function, bovine
Influence of dietary energy intake on, 181
Pituitary responses, bovine ovarian and
To PMS and GNRH administered during metestrus, 1701
Placement, 330, 570, 865, 1142, 1489, 1839
Plasma glucose and insulin release
Diabetogenic effects of pregnancy in sows on, 1694
Plasma lipid
Protein protected fat for ruminants. IV. Insulin and depot fat composition of lambs, 1338
PMS and GNRH administered during metestrus
Bovine ovarian and pituitary responses to, 1701
PMSG and $PGF_{2\alpha}$, effects of
On gonadal hormones and reproduction in the beef heifer, 1309
Ponies, young
Effect of protein level on growth in, 983
Porcine skeletal muscle giant myofibers, structural characteristics of
As observed by light and electron microscopy, 1212

Pork carcass
Predictive equations for estimating protein and fat in the, 666
Pork carcasses
Early rigor detection in, by foreleg position, 376
Pork loins, fresh
Segmentation of, into quality groups, 1618
Pork loin roasts, precooked hot and cold processed
Microwave and conventional reheating of chops from, 971
Pork quality
Analysis of spectral reflectance for measuring, 634
The scatter coefficient as a measure of, 639
Postmortem quality characteristics of the porcine carcass
Relationships among spinal cord severing, electrical stimulation and, 1206
Postpartum period of dairy cows
LH release in response to GnRH during the, 443
Poultry waste, formaldehyde treated
Animal performance and microbial adaptation of ruminants fed, 490
Pregnancy in sows
Diabetogenic effects of, on plasma glucose and insulin release, 1694
Prices, variable
Beef cattle forage systems analysis under, and forage conditions, 819
Production, future
Ewe lamb conception as an indicator of in farm flock and Columbia and Targhee ewes, 19
Production systems, ruminant
Bioeconomic analysis of, 797
Productivity and performance, comparison of
For two-breed and three-breed crosses in swine, 69
Productivity, lifetime
Differences in, of Herefords calving first at 2 and 3 years of age, 1159
Profit, meat production
Or efficient use of energy in ranching, 811
Progeny, preweaning growth of
Characterization of biological types of cattle. VII. Milk production in young cows and transmitted and maternal effects on, 908
Progesterone, blood levels of
Fertilization and LH in beef heifers on a restricted energy diet, 1071
Prolactin and thyrotropin secretion, episodic patterns of
In rams and wheters: Influence of testosterone and diethylstilbestrol, 1724
Propionate production in the rumen of Holstein steers
Fed either a control or monensin supplemented diet, 1120
Prostaglandin $F_{2\alpha}$
Glucorticoid secretion in heifers given, after trian.cinolone acetonide pretreatment, 1066
Prostaglandin $F_{2\alpha}$ or luteinizing hormone
Comparison of testosterone and androstenedione secretion in bulls given, 436
Prostaglandin $F_{2\alpha}$ and pregnant mare serum gonadotropin
Controlled superovulation in dairy heifers using, 1293
Protein and energy for weanling pigs
An evaluation of several winter selections of triticale as a source of, 417
Protein and fat in the pork carcass
Predictive equations for estimating, 666
Protein and mineral content, detergent fiber
In vitro dry matter digestibility, of wheat forage as a dairy cattle feed, 873
Protein basis
Nutrient digestibility in diets fed steers in which whole cattle blood was substituted for peanut meal on a, 746
Protein, dietary
To calorie ratios and fat sources for neonatal pigs reared artificially with subsequent performance
I. Performance, 1259
II. Serum variables, 1267
Protein level during gestation and lactation, effect of
On reproductive performance in swine, 1673
Protein level, effect of
On growth in young ponies, 983
Protein level, effect of cattle size and
On the utilization of high corn silage or high grain rations, 1748
Protein levels
Estrogenic activity and growth stimulation in steers fed varying, 541
Protein levels for growing calves
Continuous and noncontinuous, fed corn silage, 535
Protein malnourished *vs* normal growing pigs
Plasma levels of growth hormone and insulin in, in response to arginine or glucose infusion, 409
Protein protected fat for ruminants. III, IV.
Digestion and performance of lambs, 1332
Plasma lipid, insulin and depot fat composition of lambs, 1338
Protein secretions, uterine
In postpartum sows, 1730
Protein source, supplemental
Distillers dried grains with solubles as a, in diets for gestating swine, 674
Protein sources for growing beef cattle
Field wilted and direct cut dehydrated alfalfa as, 1780
Protein, soy
Replacing, in swine diets with high-protein barley and amino acids, 161
Protein withdrawal, supplemental
And monensin in corn silage diets of finishing steers, 345
From corn-corn silage rations: Effect of weight and corn intake at withdrawal, 505
Puberty in beef bulls
Growth, hormone levels, testicular development, sperm production and sexual aggressiveness in bulls of different breeds, 1054
Public health concerns
Relative to the use of subtherapeutic levels of antibiotics in animal feeds, 1413

Q

Quality and palatability of light-weight beef carcasses

Effect of electrical stimulation on, 1221
Quality groups
Segmentation of fresh port loins into, 1618
Quality level, effect of age and
On the palatability of goat meat

R

Rabbit meat, ground
Microbial, biochemical and organoleptic changes in, stored at 5 to 7 C, 584
Rabbit meat production
Effect of weaning and slaughter ages upon,
I. Body weight, feed efficiency and mortality, 573
II. Carcass quality and composition, 578
Racing performance, factors influencing
Of the standardbred pacer, 60
Rams
Blockage of sperm transport using intraepididymal calcium injections in, 1063
Rams and wethers
Episodic patterns of prolactin and thyrotopin secretion in: Influence of testosterone and diethyl-stilbestrol, 1724
Ranching, use of energy in
Profit, meat production or efficient, 811
Ratio of calf weight to cow weight
An evaluation of the, as an indicator of cow efficiency, 614
Rations, wintering cow
Kentucky bluegrass straw composition, digestibility and utilization in, 787
Rats and swine, normal and *opaque-2* corn for
Effect of maturity and drying temperature on nutritional quality and amino acid availability of, 1024
Rats, normal and *opaque-2* corn for
Effect of drying temperature on nutritional quality and availability of amino acids in, 1275
Reflectance, analysis of spectral
For measuring pork quality, 634
Region by sire interaction
For production traits in beef cattle, 957
Reproduction and body weight of mice
After long-term selection for large litter size, 1572
Reproduction by generation
Rotational crossbreeding of beef cattle, 1163
Reproduction in the beef heifer
Effects of PMSG and $PGF_{2\alpha}$ on gonadal hormones and, 1309
Reproduction rate, lifetime
Effect of long-term selection for litter size in mice on, 1563
Reproductive development, growth and
Effect of feeding protein-protected lipid upon, of yearling heifers, 769
Reproductive performance in swine
Effect of protein level during gestation and lactation on, 1673
Reproductive performance, influence of chlortetracycline in feed on swine
And on incidence and persistence of antibiotic resistant enteric bacteria, 1369
Reproductive performance of sows
Effect of lactation length and dietary antibiotics on, 884
Respiratory rate and activity rates in peripartal sows and gilts
Effects of heat stress on rectal temperature, 356
Rigor detection, early
In pork carcasses by foreleg position, 376
Rumen fluid, cell-free
Quantitation of endotoxin in, of cattle, 1759
Rumen of Holstein steers
Propionate production in the, fed either a control or monensin supplemented diet, 1120
Ruminant production systems
Bioeconomic analysis of, 797
Ruminant rations, dehydrated alfalfa in and urea
In vitro studies of dried alfalfa and complementary effects of, 499
Ruminants
Molybdenum toxicity and hypocuprosis in. A review, 1078
Ruminants fed formaldehyde treated poultry waste
Animal performance and microbial adaptation of, 490
Ruminants, nitrogen utilization in
Effect of complexing sodium bentonite with soybean meal or urea on *in vitro* ruminal release and, 1738
Ruminants, protein protected fat for
Plasma lipid, insulin and depot fat composition of lambs, 1338
Ruminants, the hindgut of
Digestion, and absorption in, 1789
Runting, effect of pre-natal
On the post-natal development of skeletal muscles in swine and rats, 1634
Ryegrass, smooth bromegrass, orchardgrass and tall fescue pasture
Performance of lambs on perennial. I. Live weight changes, digestibility and intake of herbage, 1493
II. Mineral utilization, *in vitro* digestibility and chemical composition of herbage, 1503

S

Salt for sheep
Selenium supplements in, 1515
Sarcomere formation, new
Longitudinal growth and rate of, in porcine muscle, 118
Satellite cells in growing mice
Clonal analysis of, 1241
Scatter coefficient, the
As a measure of pork quality, 639
Selnium (as selenite), requirement for
And vitamin E (as α-tocopherol) in weaned pigs: III. The effect on the development of the VESD syndrome of varying selenium levels in a low-tocopherol diet, 1001
Selenium (as selenite), requirement for
And vitamin E (as α-tocopherol) in weaned pigs: E (as α-tocopherol) in weaned pigs. The effect of varying α-tocopherol levels in a selenium deficient diet on the development of the VESD syndrome, 153
Selenium levels, blood serum

Relationship of, of pregnant cows to low dietary intake, and effect on tissue selenium levels of their calves, 562
Selenium, natural or supplemental
Effects of arsanilic acid and vitamin E upon utilization of, by swine, 425
Selenium, sulfur and nitrogen levels
In ovine rumen microorganisms, 515
Selenium supplementation, the level of inorganic
Effect of increasing, in the post-weaning diets of swine, 384
Selenium supplements
In salt for sheep, 1515
Serum progesterone and estrogen, profiles of
Effects of dietary monensin and sex of calf on profiles of, in late pregnancy of first-cross Brahman-Hereford cows, 1316
Serum variables, II.
Dietary protein to calorie ratios and fat sources for neonatal pigs reared artificially with subsequent performance, 1267
Serving capacity of bulls
The influence of, on herd fertility, 589
Sex on calf, effects of dietary monensin and
On profiles of serum progesterone and estrogen in late pregnancy of first-cross Brahman-Hereford cows, 1316
Shape, cow size and
Principal components for, 370
Sheep
Soybean straw intake and nutrient digestibility by, 1086
Sheep, feedng behavior in sheep
Effects of elfazepam on digestibility and, 1356
Sheep, nitrogen balance of
Energy partitioning and, fed soybean straw diets, 1326
Sheep, reentrant cannulae in
Isolation of segments of the jejunum and ileum for absorption studies using, 726
Sheep, salt for
Selenium supplements in, 1515
Sheep, subclinical mastitis in
Incidence and importance of, 1
Sheep, tissues in
Performance and vanadium content of, as influenced by dietary vanadium, 1091
Shelf-life characteristics
Influence of fat thickness, marbling and length of aging on beef palatability and, 658
Shorthorn cattle, milking
Crossing Angus and: Calf performance to weaning, 83
Shrinkage of PSE, normal and DFD hams
During transit and processing, 1236
Simmental sired calves, calving ease and growth rate of
I. Factors affecting calving ease and growth rate, 922
II. Genetic parameter estimates, 930
Sires, Limousin and Simmental
Mated with Angus and Hereford cows, 341
Skeletal muscles in swine and rats
Effect of pre-natal runting on the post-natal development of, 1634
Sodium bentonite, effect of complexing
With soybean meal or urea on *in vitro* ruminal ammonia release and nitrogen utilization in ruminants, 1738
Solvents, three
Degradation of feedstuff nitrogen in the rumen *vs* nitrogen solubility in, 1768
Sorghum, effect of roasting
And soybean on gains and digestibility, 867
Sorghum for swine
Availability of tryptophan, lysine and threonine in, 133
Sorghum grain, bird-susceptible and bird-resistant
Influence of roughage on the digestibility of steer rations containing, 271
Sorghum, the waxy gene of
Effect of incremental dosages of, on digestibility, 1113
Sows and gilts, peripartal
Effects of heat stress on rectal temperature, respiratory rate and activity rates in, 356
Sows and their progeny, confined
Effects of copper and iron supplements on performance and hematology of, through four reproductive cycles, 678
Sows, dietary energy source for
And pig fasting influences on pig and milk composition, 1009
Sows, pregnancy in
Diabetogenic effects of, on plasma glucose and insulin release, 1694
Sows, postpartum
Uterine protein secretions in, 1730
Sows, reproductive performance of
Effect of lactation length and dietary antibiotics on, 884
Soybean meal
Effect of complexing sodium bentonite with, or urea on *in vitro* ruminal ammonia release and nitrogen utilization in ruminants, 1738
Soybeans, sorghum and
Effect of roasting, on gains and digestibility, 867
Soybean straw diets
Energy partitioning and nitrogen balance of sheep fed, 1326
Soybean straw intake
And nutrient digestibility of sheep, 1086
Soy protein, replacing
In swine diets with high-protein barley and amino acids, 161
Sperm in the oviducts, number of
Uterus and cervix of the mated ewe as affected by exogenous estradiol, 1309
Sperm production, growth, hormone levels, testicular development
Puberty in beef bulls: and sexual aggressiveness in bulls of different breeds, 1054
Sperm transport, blockage of
Using intraepididymal calcium chloride injections in rams, 1063
Spikes, hormone secretory
A statistical method for detection of, 699
Spinal cord severing
Relationships among, electrical stimulation and postmortem quality characteristics of the porcine carcass, 1206
Statistical method, a
For detection of hormone secretory spikes, 699
Steer rations, digestibility of

Influence of roughage on the, containing bird-susceptible and bird-resistant sorghum grain, 271
Steers
Estrogenic activity and growth stimulation in, fed varying protein levels, 541
Nutrient digestibility in diets fed, in which whole cattle blood was substituted for peanut meal on a protein basis, 746
Steers fed grain, corn silage or haylage-corn diets
Evaluation of beef from, 41
Steers, feedlot
Effect of dietary sulfur addition and Synovex-S ear implants on an all-concentrate finishing diet, 463
Steers, finishing
Supplemental protein withdrawal and monensin in corn silage diets of, 345
Steers, growing-finishing
Effect of monensin on performance and plasma metabolites in, 350
Steers, production, carcass and palatability characteristics of
By different management systems, 333
Steers, three-way cross
Characterization of biological types of cattle. VIII. Postweaning growth and carcass traits of, 1178
Steroids, secretion of
After induced luteal regression in beef heifers: Effects of $PGF_{2\alpha}$ and removal of corpora lutea, 1718
Stimulation, effect of electrical
On quality and palatability of light-weight beef carcasses, 1221
Stimulation, electrical
Relationships among spinal cord severing, and postmortem quality characteristics of the porcine carcass, 1206
Straw, Kentucky bluegrass
Composition, digestibility and utilization in wintering cow rations, 787
Stress, effect of collection
On serum growth hormone levels in pygmy goats, 458
Stress effects, thermal
On uterine blood flow in dairy cows, 175
Sulfur addition, effects of dietary
And Synovex-S ear implants on feedlot steers fed on all-concentrate finishing diet, 463
Sulfur and nitrogen levels
Selenium, in ovine rumen microorganisms, 515
Superovulation in dairy heifers, controlled
Using prostaglandin $F_{2\alpha}$ and pregnant mare serum gonadotropin, 1293
Swine
Comparison of productivity and performance for two-breed and three-breed crosses in, 69
Effects of arsanilic acid and vitamin E upon utilization of natural or supplemental selenium by, 425
Swine and rats, skeletal muscles in
Effect of pre-natal runting on the post-natal development of, 1634
Swine, antibiotic resistant enteric bacteria in growing-finishing
Influence of type of antibiotic and length of antibiotic feeding period on performance and persistence of, 1383
Swine blastocysts *in vitro*
Attachment and trophoblastic outgrowth of, 1712
Swine embryos *in vitro*
Morphological and quantitative aspects of the development of, 711
Swine, gestating
Distillers dried grains with solubles as a supplemental protein source in diets for, 674
Swine, growing and finishing
Relation of ^{40}K count and probe to carcass composition changes in, 651
Swine, market
Genetic and nutritional effects on carcass chemical composition and organ weights of, 992
Swine, rats and
Effect of maturity and drying temperature on nutritional quality and amino acid availability of normal and *opaque-2* corn for, 1024
Swine, reproductive performance in
Effect of protein level during gestation and lactation on, 1673
Swine, sorghum for
Availability of tryptophan, lysine and threonine in, 133
Swine, the post-weaning diets of
Effect of increasing the level of inorganic selenium supplementation in, 384
Swine, tissue lipids of
A comparison of poultry and animal fat on performance, body composition and, 1018
Swine, young
Utilization of the energy of dried whey and wheat middlings by, 402
Synovex-S ear implants
Effect of dietary sulfur addition and, on feedlot steers fed an all-concentrate finishing diet, 463
Systems analysis, livestock
The future of, 807
Systems approach for land resource analysis
And planning of limited renewable natural resources, 819
Systems, beef cattle production
Use of cereal residues in, 849
Systems, beef cow forage
Utilization of corn and grain sorghum residues in, 831

T

Temperature, effect of drying
On nutritional quality and availability of amino acids in normal and *opaque-2* corn for rats, 1275
Temperature, effects of heat stress on rectal
Respiratory rate and activity rates in peripartal sows and gilts, 356
Testosterone and androstenedione secretion
Comparison of, in bulls given prostaglandin $F_{2\alpha}$ or luteinizing hormone, 436
Tetracycline, the effect of
Upon the spread of bacterial resistance from calves to man, 1437
The missing subclass problem
In two-way fixed models, 1125
Thermal stress, effects on

And epinephrine on uterine blood flow in ewes, 167
Threonine, tryptophan, lysine and
Availability of, in sorghum for swine, 133
Thyrotropin secretion in rams and wethers
Episodic patterns of: Influence of testosterone and diethylstilbestrol, 1724
Testosterone and diethylstilbestrol, influence on
Episodic patterns of prolactin and thyrotropin secretion in rams and wethers, 1724
Tissue, isolated intramuscular adipose
Lipogenesis in, from four bovine muscles, 1626
Tissue lipids of swine
A comparison of poultry and animal fat on performance, body composition and, 1018
Tissue selenium levels
Relationship of blood serum selenium levels of pregnant cows to low dietary intake, and effect on, of their calves, 562
Toxicity, molybdenum and hypocuprosis
In ruminants: A review, 1078
Traits, birth, preweaning and postweaning
Of Angus, Holstein, Simmental and Chianina sired calves, 362
Traits by generation, preweaning
Rotational crossbreeding of beef cattle, 1170
Traits in progeny of young cows, survival
Characterication of biological types of cattle. VI. Transmitted and material effects on birth and, 892
Traits, pig carcass
Genetic, sex and diet effects on, 1581
Traits, prebreeding
Heritabilities and genetic and phenotypic correlations for, reproductive traits and principal components, 937
Traits, preweaning
Breed of sire and dam comparisons for, preweaning traits under commercial beef cattle conditions, 977
Traits, production
Region by sire interaction for in beef cattle, 957
Traits, reproductive and principal components
Heritabilities and genetic and phenotypic correlations for prebreeding traits, 937
Triamcinolone acetonide pretreatment
Glucocorticoid secretion in heifers given prostaglandin $F_{2\alpha}$ after, 1066
Triticale, several winter selections of
An evaluation of, as a source of protein and energy for weanling pigs, 417
Trophoblastic outgrowth, attachment and
Of swine blastocysts *in vitro*, 1712
Tryptophan, lysine and threonine, availability of
In sorghum for swine, 133
Twnning, factors affecting
And effects of twinning in dairy cattle, 950
Twinning in dairy cattle
Factors affecting twinning and effects of, 950
Twinning, induction of
In beef heifers by bilateral embryo transfer, 449

U

Urea
Effect of complexing sodium bentonite with soybean meal, or on *in vitro* ruminal ammonia release and nitrogen utilization in ruminants, 1738
Urea in ruminant rations
In vitro studies of dried alfalfa and complementary effects of dehydrated alfalfa and, 499
Uterine blood flow
And nutrient uptake during late gestation in ewes with different number of fetuses, 189
Uterine blood flow in ewes
Effects of thermal stress and epinephrine on, 167
Uterine contractions in ewes
Blockage by actinomycin D of estradiol-17β-induced, 1037

V

Vanadium content of tissues in sheep
Performance and, as influenced by dietary vanadium, 1091
Vanadium, dietary
Performance and vanadium content of tissues in sheep as influenced by, 1091
VESD syndrome, the development of the
Requirement for selenium (as selenite) and vitamin E (as α-tocopherol) in weaned pigs. I. The effect of varying α-tocopherol levels in a selenium deficient diet on, 143
Requirement for selenium (as selenite) and vitamin E (as α-tocopherol) in weaned pigs: III. The effect on, of varying selenium levels in a low-tocopherol diet, 1001
VFA production, lactase activity and
In the cecum and colon of pigs fed a corn-soy or 40% whey diet, 1648
Vitamin E
Effects of arsanilic acid and, upon utilization of natural or supplemental selenium by swine, 425
Vitamin E (as α-tocopherol)
Requirement for selenium (as selenite) and, in weaned pigs: III. The effect on the development of the VESD syndrome of varying selenium levels in a low-tocopherol diet, 1001
Vitamin E (as α-tocopherol) in weaned pigs
Requirement for selenium (as selenite) and: The effect of varying α-tocopherol levels in a selenium deficient diet on the development of the VESD syndrome, 153
Voles, meadow
Regulation of intake and utilization of carbohydrates by, 1641

W

Waste management procedure and stage of production on composition
Influence of practical extremes in diet, 520
Waxy gene of sorghum
Effect of incremental dosages of the, on digestibility, 1113
Weaning and slaughter ages, effect of
Upon rabbit meat production. I. Body weight, feed efficiency and mortality, 573
Weaning weight and grade

Factors influencing, of West Virginia beef calves, 596
Weaning weight in Hereford cattle
Inbreeding by environment interactions for, 48
Mating system by environment interactions for, 54
Weight and corn intake at withdrawal
Supplemental protein withdrawal from corn-corn silage rations: Effect of, 505
Weight gain
Effect of dietary Ca and P levels from 40 to 100 kg body weight on, and bone and soft tissue mineral concentrations, 686
Weight to cow weight, calf
An evaluation of the ratio of, as an indicator of cow efficiency, 614
Wethers
Abomasal levels of lysine and methionine in, fed polymerized L-lysine-HCl and polymerized L-methionine, 778
Wheat forage as a dairy cattle feed
In vitro dry matter digestibility, detergent fiber, protein and mineral content of, 873
Wheat middlings
Utilization of the energy of dried whey and, by young swine, 402
Whey diet, 40%
Lactase activity and VFA production in the cecum and colon of pigs fed a corn-soy or, 1648
Whey, the energy of dried
Utilization of, and wheat middlings by young swine, 402

Y

Yearlings
Irrigated pasture for beef heifers to be bred as, 878

AUTHOR INDEX
FOR VOLUME 47, 1978

A

Absher, C. W., 370
Acosta, R. A., 691
Adair, R. L., 914
Addis, P. B., 630, 1260, 1324
Allen, D. M., 383
Amann, R. P., 1307
Ammerman, C. B., 1351
Anderson, D. J., 999
Anderson, D. M., 900
Anderson, J. H., 124
Anderson, P. A., 654
Antonik, A., 630
Anthony, H. D., 226, 1329
Armstrong, W. D., 176
Asano, T., 159

B

Backs, D., 347
Baile, C. A., 1225
Baker, D. H., 654
Baldwin, R. L., 686
Bales, G. L., 561
Barnes, R. F., 747
Barth, K. M., 699, 927
Bartley, E. E., 226, 791, 1329
Bazer, F. W., 672
Bechtle, R. M., 226
Beeson, W. M., 29
Bellows, R. A., 584
Bendel, R. B., 188
Bereskin, B., 389
Berg, S. L., 203
Berry, B. W., 601, 788
Besecker, R. J., 420
Bidner, T. D., 114
Blake, J. T., 216
Boling, J. A., 1
Bond, J., 957
Bondari, K., 358
Boone, W. R., 908
Boulware, R., 106, 114
Boyd, R. D., 883, 874
Bradley, N. W., 1
Brady, P. S., 492, 1135
Brinks, J. S., 601
Britt, J. H., 532
Britton, R., 241
Brown, R. D., 435
Bryan, J. M., 699, 927
Bryan, J. M., 927
Burfening, P. J., 595, 999
Burns, W. T., 352
Burton, G. W., 800
Bush, L. P., 552
Butcher, J. E., 216
Butts, W. T., 1246, 1254

C

Call, J. W., 216
Calvert, C. C., 420, 448
Carpenter, J. A., Jr., 601
Carr, T. R., 615
Carruthers, T. D., 532
Carter, R. C., 1246
Carver, L. A., 699, 927
Chant, J. L., Jr., 1207
Chapman, J. D., 780
Cheeke, P. R., 648
Childs, G. R., 992
Chung, Po, 319
Church, D. C., 51
Chyba, L. H., 791
Clanton, D. C., 765
Clark, J. G., 1324
Clawson, A. J., 176, 867
Cline, T. R., 420
Collier, R. J., 923
Combs, G. E., 1233
Connell, J. T., 699, 927
Conrad, J. H., 1195
Corbett, W. S., 1174
Cote, P. J., Jr., 441
Cowan, R. L., 435
Cromwell, G. L., 505
Crooker, B. A., 944
Cross, D. L., 544
Cross, H. R., 1109, 1265
Crouse, J. D., 858, 1063, 1167, 1207, 1225
Cundiff, L. V., 843, 1022, 1031, 1042, 1054, 1063
Cunningham, P. J., 874, 883
Curtis, S. E., 347, 1292, 1301

D

Dahmen, J. J., 331, 336
Dantzler, J. R., 908
Davey, R. J., 389
Dayton, A. D., 606, 791
de Blas, J. C., 166
Deinum, B., 712
DeRouen, T. M., 584
Deutscher, G. H., 19
Dickey, J. F., 908
Dikeman, M. E., 606, 1095
Dillard, E. U., 131, 137, 1004
Dinius, D. A., 736, 1109, 1265
Dinkel, C. A., 56, 70
Doane, T. H., 1014
Doyle, J. J., 398
Dunbar, J. R., 1324
Dzakuma, J. M., 1014

E

Echternkamp, S. E., 514, 521
Eden, C. W., 375
Edmeades, D. M., 639
Edwards, R. L., 1102
El-Ibiary, H. M., 82
El-Negoumy, A. M., 448
Ely, D. G., 552, 622
Eslick, R. F., 448
Everson, D. L., 331, 336
Ewan, R. C., 488
Ezekwe, M. O., 1121

F

Fagerlin, P. T., 601
Ferrell, C. L., 858, 1167, 1207
Field, R. A., 858, 1207
Fifield, R. B., 577
Fina, L. R., 226, 1329
Fisher, B. A., 347
Fogwell, R. L., 1314
Ford, J. J., 828
Ford, S. P., 538
Forsyth, D. M., 420
Fox, C. A., 833
Fox, J. D., 622, 1152
Fraga, M. J., 166
Freeman, A. E., 358
Fribourg, H. A., 699, 927
Friedrich, R. L., 595, 999
Frobish, L. T., 1145
Fitzhaugh, H. A., Jr., 1022
Furuya, S., 159

G

Gaines, J. A., 1246, 1254
Gálvez, J. F., 166
Garrett, W. N., 686
Gaskins, C. T., 188, 780, 1281
Gillett, T. A., 1260
Ginther, O. J., 203
Graber, G., 984
Grant, R. J., 1233
Gray, E. F., 370
Gregory, K. E., 843, 1022, 1031, 1042, 1054, 1063
Griffith, W. K., 708
Guthrie, H. W., 1145

H

Hafs, H. D., 532, 666, 919, 923
Hagsten, I., 1233
Halbert, S. A., 914
Hale, O. M., 46

Han, Y. W., 648
Hanks, E. M., 34
Harrison, A. R., 383
Harrison, V. L., 1207, 1225
Hartnell, G. F., 935
Hatfield, E. E., 1345
Haught, D. G., 634
Haynes, N. B., 919, 923
Hays, V. W., 505
Hedrick, H. B., 151
Heinemann, W. W., 34
Hellwig, R. E., 276, 800
Henderson, C. L., 1152
Hendrix, W. F., 188, 1281
Henry, P. R., 1351
Hill, C., 1246, 1254
Hill, J. R., Jr., 908
Hinman, D. D., 331, 336
Hinrichs, D. J., 1281
Hintz, H. F., 209, 1243
Hintz, R. L., 1243
Hodges, E. M., 366
Hoffman, C., 192
Hogberg, M. G., 893
Hohobenken, W., 89, 97
Holtan, D. W., 1287
Hoover, W. H., 944
Hudson, F. A., 15
Hughes, J. H., 805
Humes, P. E., 106, 114
Hunsley, R. E., 6
Hunt, M. C., 383, 606
Huntington, G., 241
Hwang, P. T., 630

I

Ibbetson, R. W., 791
Imoto, S., 467, 479
Inskeep, E. K., 682, 1314

J

Jackson, D. W., 788
Jacobs, J. A., 331, 336
Jacobson, M. E., 677
Jay, E., 46
Jenkins, P. E., 1314
Jennings, T. G., 601
Jenny, B. F., 544
Jensen, A. H., 347
Johnson, B. H., 375
Johnson, C. L., 41
Johnson, L. A., 198
Johnson, R. J., 577
Jorgensen, Neal, 747
Joseph, A. L., 601
Joyce, J. A., 82
Judge, M. D., 156

K

Kameoka, K., 159
Kastner, C. L., 383
Kavanaugh, J. F., 435
Kelley, K. W., 188, 1281, 1292, 1301
Kellogg, D. W., 561
Kemp, J. D., 505, 622
King, G. J., 639
Kingsbury, J. M., 319
Kinkie, R. A., 999
Kirtland, D., 1128
Kiser, T. E., 919, 923
Kiser, T. E., 923
Knowlton, P. H., 944
Koblmeier, R. H., 1095
Koch, R. M., 142, 1042, 1031, 1054, 1063
Koger, M., 366
Koller, B. L., 209
Kornegay, E. T., 1272
Kothmann, M. M., 691
Kramer, J. K. G., 497
Kress, D. D., 595
Krook, L., 319
Kropf, D. H., 383
Ku, P. K., 492, 1135
Kunsman, J. E., 858

L

Landon, M. E., 151
Larsen, Svend-Aage, 41
Laster, D. B., 843, 1022, 1031, 1042, 1054, 1063
Leach, R. M., Jr., 1174
Lemenager, R. P., 247, 255, 262
Lepore, P. D., 984
Levine, J. M., 89, 97
Lewis, A. J., 634
Lewis, G. S., 682, 1314
Linnerud, A. C., 176
Lipsey, R. J., 1095
Lodge, G. A., 497
Long, T. A., 1174
Lun, A., 639
Lunchick, C., 176
Lusby, K. S., 247, 255, 805, 816
Luszcz, L. J., 908
Loveday, H. D., 606

M

Macleod, C. K., 833
Magrini, R. J. P., 682
Mahan, D. C., 456
Martin, R. J., 1121
Martin, T. G., 6, 29
Matsushima, J. K., 601
Mavrogenis, A. P., 1004
Maxwell, J. S., 1114
Mayar, M. Q., 235
McCampbell, H. C., 427, 1114
McCartor, M. M., 270
McClure, W. H., 1246, 1254
McCormick, W. C., 276, 800, 1080, 1089, 1219, 1239
McDaniel, M. C., 427
McDowell, R. E., 1184
McGrath, C. J., 630
McLaren, J. B., 352, 699, 927
Mertens, D. R., 712
Miller, E., 988
Miller, E. R., 1135
Miller, R. B., 639
Millinix, B. G., Jr., 1080
Mistery, S. P., 654
Mohler, M. T., 29
Monson, W. G., 276, 800
Moran, E. T., Jr., 833
Morrow, R. E., 352
Moser, B. D., 874, 883
Mowat, D. N., 833
Moxon, A. L., 456
Mullinix, B. G., 1089

N

Naber, E. C., 979
Nagaraja, T. G., 226, 1329
Namioka, S., 467, 479
Nelson, A. G., 97
Nett, T. M., 184, 1307
Neville, W. E., Jr., 1080, 1089, 1239
Newman, C. W., 448
Newton, G. L., 276, 1338
Nielsen, M. K., 1014
Niswender, G. D., 1307
Nockels, C. F., 788
Noden, P. A., 666
Noonan, J. J., 914
Norton, H. W., 1292, 1301

O

O'Conner, M. L., 660
O'Kelley, R., 1233
Oldfield, J. E., 1157, 1287
Ollis, G. W., 677
Oltjen, R. R., 957, 979
Owens, F. N., 247, 255, 262
Oxender, W. D., 666

P

Peacock, F. M., 366
Pearson, V., 488
Pendulum, L. C., 1
Peo, E. R., 874
Pérez, E., 166
Perry, S. C., 15
Perry, T. W., 29
Pickett, B. W., 184
Plumlee, M. P., 420
Poe, E. R., Jr., 883
Pollak, E. J., 853
Pond, W. G., 319, 1128
Pope, L. S., 805, 816
Prior, R. L., 1225
Pursel, V. G., 198, 1145
Pulse, R. E., 1287

R

Ralston, A. T., 1203
Randall, R. P., 51
Raun, D. S., 1180
Reeves, J. J., 235, 914
Rempel, W. E., 630
Reneger, R. H., 532
Reynolds, W. L., 584
Richardson, A. T., 6
Rincon, Romulo, 865
Ringo, J. A., 914
Rivinus, B., 192
Robertson, J. B., 209
Robinson, O. W., 131, 137, 375, 1004
Rohweder, D. A., 747
Rough, D. K., 389
Rounsaville, T., 1128
Rumsey, T. S., 967

S

Saacke, R. G., 660
Sakamoto, K., 159
Sarkar, N. K., 497
Satter, L. D., 935
Savage, J. S., 1141
Saylor, W. W., 1174
Schanbacker, B. D., 514
Schilling, P. E., 106, 114
Schulman, L. L., 198
Schlegel, J. A., 15
Schmitz, J. A., 1157
Schurg, W. A., 51, 1287
Scott, R. A., 1095
Seerley, R. W., 427, 1114
Sharp, D. C., 672
Shea, B. F., 677
Shockey, B. J., 255
Shupe, J. L., 216
Slyter, A. L., 19
Skelley, G. C., 544, 1022
Smart, R. A., 216
Smith, F. H., 865
Smith, G. C., 270, 639
Smith, G. M., 843, 1022, 1031, 1042, 1054, 1063, 1207
Smith, J. B., 1080, 1089
Smith, M. E., 383
Smith, O. B., 833
Smith, S. K., 648
Smithson, L. J., 805, 816
Sniffen, C. J., 944
Song, Hoon, 56, 70
Spaulding, J. E., 398
Spears, J. W., 552, 1345
Speer, V. C., 634
Stellflug, J. N., 919
Stephens, D. F., 805, 816
Stern, M. D., 944
Stothers, S. C., 900
Summers, R. L., 622
Swanson, L., 192

T

Takahashi, S., 159
Tarnavsky, G. K., 235
Teague, H. S., 828
Thomas, J. W., 721
Thompson, C. S., 544
Thompson, Jr., D. L., 184
Thompson, D. J., 977
Thompson, E. W., 630
Thompson, G. B., 151
Thompson, L. H., 780, 1141
Thrift, F. A., 370
Torrence, A. K., 1102
Torres, A., 166
Totusek, R., 247, 255, 262, 342, 805, 816
Tribble, L. F., 780
Trounson, A. O., 677
Trujillo-Figueroa, V., 505
Turman, E. J., 342

U

Ufford, G. R., 853
Ullery, D. E., 1135
Ulry, D. E., 492
Urquhart, N. S., 561
Utley, P. R., 276, 800, 1219, 1239, 1338

V

Valdivia, S. R., 1351
Vaniman, D. D., 595
Van Houweling, C. D., 984
Van Soest, P. J., 209, 712
Van Vleck, L. D., 1243

W

Wagner, S. B., 601
Walker, E. F., Jr., 319, 1128
Walters, L. E., 615
Wangsness, P. J., 441
Wardlaw, F. B., 1102
Weaver, G. L., 15
Weinland, B. T., 957
Weswig, P. H., 1157
Wettemann, R. P., 342
Whanger, P. D., 1157
Whiteman, J. V., 615, 805, 816
Wilcox, C. J., 1351
Wilham, R. L., 124, 358
Williams, J., 999
Williams, J. C., 858
Wilson, D. M., 46
Wyatt, R. D., 342
Wykle, B., 1260

Y

Yang, Y. T., 686
Young, D. C., 34
Young, L. D., 843
Young, L. G., 639
Yusuff, M. K. M., 131, 137

Z

Zavy, M. T., 672
Zimmerman, D. R., 488, 893

SUBJECT INDEX
FOR VOLUME 47, 1978

A

Acrosome morphology, motility and fertilizing capacity
Effect of orvus es paste on, of frozen-thawed boar sperm, 198
Adipose tissue chemical composition
And carcass traits related to bovine carcass composition, 606
Adipose tissue metabolism
Effects of dietary lipid supplementation of lambs and steers, 686
Age at first farrowing
Relationship of, and size of first litter to subsequent reproductive performance in sows, 780
Age, effect of
On estimates of bovine growth-curve parameters, 352
Agricultural Research
In the public market place, 1357
Alga, a spiral blue-green
Production and nutritive value of *Arthrospira platensis*, grown on swine wastes, 319
Aluminum, effect of dietary
On animal performance and tissue mineral levels in growing steers, 1351
Amino acid-iron chelate hematinic
Evaluation of an, for the baby pig, 1135
Amino acids
Selected high forage rations and their relationship to beef quality, fatty acids and, 1102
Androgen titers, seasonal
Effect of pinealectomy on, antler growth and feed intake in white-tailed deer, 435
Angus, Brahman, Charolais and F_1 crosses of these breeds
Weaning traits of, 366
Angus field data
Weaning weight correction factors from, 124
Angus heifer calves, weaning age of
As a factor influencing calf and cow performance, 6
Animal performance
Effect of dietary aluminum on, and tissue mineral levels in growing steers, 1351
Relationships among laboratory analyses of pelleted warm season grasses and, 276
Anti-egg yolk diluent sera, effect of
Upon bovine spermoatozoa in egg yolk diluter, 660
Antler growth
Effect of pinealectomy on season androgen titers, and feed intake in white-tailed deer, 435
Arthrospira platensis
Production and nutritive value of, a spiral bluegreed alga grown on swine wastes, 319
ASAS committees, 1401
Awards, ASAS honorary, 1370
Awards, outstanding senior, 1399

B

Bacteria, rumen gram-negative
Relationship of, and free endotoxin to lactic acidosis in cattle, 1329
Bambermycines, effect of
On growing-finishing swine, 1233
Barley and corn
Apparent digestibility of phosphorus in, for growing swine, 420
Barley, sorghum and wheat, corn
Bioassay determination of the biotin content of, 654
Barleys, glacier and high amylose glacier
Comparative nutritive value of, 448
Barrows and gilts, performance of
Effect of floor space restriction on age at puberty in gilts and on, 828
Beef bullocks and steers
Live animal performance and carcass characteristics of, 151
Beef cattle
Conserved pasture crops for finishing, 736
Heterosis and breed maternal and transmitted effects in,
I. Preweaning traits, 1031
II. Growth rate and puberty in females, 1042
III. Growth traits of steers, 1054
IV. Carcass traits of steers, 1063
Mathematical models of postweaning growth, feed intake and carcass composition of,
1. Empirical predictive models of voluntary feed intake from weaning to slaughter, 56
II. Estimation of chemical and physical composition of gain for various biological types of cattle, 70
Synchronization of estrus with $PGF_2\alpha$ in, 999
Beef cattle, British breeds of
Heterosis from crosses among: straightbred *versus* crossbred cows I, 1246; II, 1254
Beef cattle conditions, commercial
Heterosis expression for preweaning traits under, 370
Beef cattle, reproduction of
Phosphorus influence on growth and, 216
Beef cattle, selection in
III. Correlated response of carcass traits to selection for weaning weight, yearling weight and muscling score in cattle, 142
Beef cows, postpartum
Stimulation of estrogen and luteinizing hormone secretion in, 521
Beef cows, range
Monensin, forage intake and lactation of Monensin and extruded urea-grain for, 262
Beef females
Growth patterns for pelvic dimensions and other body measurements of, 1080

Beef production
Crossbreeding and management systems for, 19
Beef, quality and yield characteristics of
Nutritional regime effects on, 383
Beef quality, fatty acids and amino acids
Selected high forage rations and their relationship to, 1102
Beef steers finished on forage diets
Carcass and palatability characteristics of, 1265
Bermudagrass and orchardgrass-ladino clover pastures
Total digestible nutrient content of consumed forage and total digestible nutrient consumption by yearling beef steers grazing nitrogen-fertilized, 699
Bioassay determination
Of the biotin content of corn, barley, sorghum and wheat, 654
Biotin content
Bioassay determination of the, of corn, barley, sorghum and wheat, 654
Birth and weaning traits, I.
Characterization of biological types of cattle - Cycle II: 1022
Birth weight
Phenotypic and genetic relationships between calving ease, gestation length, and preweaning growth, 595
Blood creatine kinase
As a predictor of the porcine stress syndrome, 630
Blood flow, testicular
Effects of LH, FSH, prolactin and $PGF_2\alpha$ on, and testosterone secretion in the ram, 1307
Boar, exposure to a
Age at puberty and ovulation rate in gilts in confinement as influenced by, 1141
Boar sperm, frozen-thawed
Effect of orvus es paste on acrosome morphology, motility and fertilizing capacity of, 198
Boars, testicular growth and development in
Prenatal and postnatal influences on, 375
Body composition
In suckling rabbits, 166
Body measurements of beef females
Growth patterns for pelvic dimensions and other, 1080
Body weight gain
Effect of dietary Ca, Cu and Zn level on, and tissue mineral concentrations of growing pigs and rats, 1128
Body weight gain, increasing
Efficacy of buquinolate in, and improving feed efficiency in feedlot lambs, 15
Bovine conceptus, role of the early
And gravid uterus in altering uterine arterial contractility, 538
Bovine ova
Culture of ovine and, 908
Breed maternal and transmitted effects
Heterosis and, in beef cattle
I. Preweaning traits, 1031
II. Growth rate and puberty in females, 1042
III. Growth traits of steers, 1054
IV. Carcass traits of steers, 1063
Broiler litter silage
Efficacy of, for beef steers, 544
Bulls
Effect of prostaglandin E_2 and $F_2\alpha$ on serum luteinizing hormone, testosterone and prolactin in, 923
Testicular steroid secretion in response to GnRH-mediated LH and FSH release in, 514
Bulls, growth hormone in
Effect of intracarotid infusion of prostaglandin $F_2\alpha$ on plasma prolaction and, 919
Bulls, Hereford
Genetic analysis of postweaning performance of, 1004
Bulls, protein levels for
Comparison of three continuous dietary levels on growth and carcass traits, 29
Bulls, short scrotum
Carcass, palatability and retail characteristics of steers and, 601
Buquinolate, efficacy of
In increasing body weight gain and improving feed efficiency in feedlot lambs, 15

C

Calves
Time of processing, subjected to marketing and shipping stress, 1324
Calves, male
Effect of Zearalanol on weaning weight of, 1203
Calves, performance and health of
Fed wet caged layer excreta as a protein supplement, 833
Calves, straightbred and crossbred
Relationships of milk yield of dam to early growth rate of, 584
Calving ease
Phenotypic and genetic relationships between, gestation length, birth weight and preweaning growth, 595
Cannon bone circumference, front
Estimation of heritabilities for weight, height and, of thoroughbreds, 1243
Carbohydrate, effects of nonstructural
Urea and soluble protein levels on microbial protein synthesis in continuous culture of rumen contents, 944
Carcass
Palatability and retail characteristics of steers and short scrotum bulls, 601
Carcass and palatability characteristics
Of beef steers finished on forage diets, 1265
Carcass characteristics
Feedlot performance, and meat palatability of steers fed concentrate for short periods, 1109
Live animal performance and, of beef bullocks and steers, 151
Carcass characteristics, growth and
Elfazepam and synovex-S influences on, of steers fed two dietary energy levels, 1225
Carcass characteristics of short-fed steers
Effect of protected lipids on feedlot performance of short-fed steers, 270
Carcass composition and palatability
Effect of dietary energy intake on, of different weight carcasses from ewe and ram lambs, 1207
Carcass composition, bovine
Adipose tissue chemical composition and carcass traits related to, 606

Carcass composition changes
In growing and finishing swine, 615
Carcass traits
Relationships between growth traits, and muscle nucleic acid concentrations in the bovine, 1095
Adipose tissue chemical composition and, related to bovine carcass composition, 606
Protein levels for bulls: Comparison of three continuous dietary levels on growth and, 29
Carcass traits of steers, IV.
Heterosis and breed maternal and transmitted effects in beef cattle, 1063
Carcasses from ewe and ram lambs
Effect of dietary energy intake on carcass composition and palatability of different weight, 1207
Catfish, channel
Heritability of body size traits, dressing weight and lipid content in, 82
Cattle, beef
Effect of inbreeding on within-herd genetic evaluation of, 853
Cattle, biological types of
Characterization of. IX. Postweaning growth and puberty of three-breed cross heifers, 843
Mathematical models of postweaning growth, feed intake and carcass composition of beef cattle. II. Estimation of chemical and physical composition of gain for various, 70
Cattle, characterization of biological types of
Cycle II: I. Birth and weaning traits, 1022
Cattle, lactic acidosis in
Relationship of rumen gram-negative bacteria and free endotoxin to, 1329
Cattle, the rumen bacteria of
Evidence of endotoxins in, fed hay of grain, 226
Cell wall and dry matter digestion, comparative
In the cecum of the pony and the rumen of the cow using *in vitro* and nylon bag techniques, 209
Cellulose disappearance
Monensin effects on rumen turnover rate, twenty-four hour VFA pattern, nitrogen components and, 255
Clean wool determination
Of individual fleeces, 41
Characteristics, retail
Carcass, palatability and, of steers and short scrotum bulls, 601
Coastal bermudagrasses
Comparison of Tifton 44 and, as pastures and as harvested forages, 800
Coffee grounds. II
Effects of, on performance of milking dairy cows and feedlot cattle, and on rumen fermentation and dry matter removal rate, 791
Commercial beef cattle conditions
Heterosis expression for preweaning traits under, 370
Committees, ASAS, 1401
Committee reports, 303, 1403
Conception in lactating sows
Attempts to induce, 1145
Copper, hepatic
Intracellular distribution of, in normal and copper-loaded sheep, 1174
Corn, barley and
Apparent digestibility of phosphorus in, for growing swine, 420
Corn, barley, sorghum and wheat
Bioassay determination of the biotin content of, 654
Corn silage dry matter, true
Influence of NPN treatment, oven temperature and drying time on error in determining, 1152
Corn supplements, monensin fortified
In combination with testosterone-estradiol implants and vaginal devices for finishing heifers on pasture, 1239
Corn storage, influence of method of
And vitamin E and selenium supplementation on pig survival and reproduction, 639
Corn stored under different conditions
Acceptability and digestibility of swine diets containing, 46
Corpus luteum in mares, life span of
Effect of estrogens on uterine tone and, 203
Correlations, direct and maternal genetic
Estimates of, for pupa weight and family size of *Tribolium*, 358
Cottonseed meats, raw
Detoxification of gossypol in raw cottonseed and the use of, as a replacement for soybean meal in diets for growing-finishing pigs, 865
Countries, developing
Are we prepared to help small farmers in, 1184
Cow-calf management systems, evaluation of
Using sod-seeded ryegrass pastures, 1219
Cow, the rumen of the
Comparative cell wall and dry matter digestion in the cecum of the pony and, using *in vitro* and nylon bag techniques, 209
Cows, lactating dairy
Luteolysis, growth hormone, glucocorticoids, prolactin and milk production in, given prostaglandin $F_2\alpha$, 532
Cows, performance of milking dairy
Coffee grounds II. Effects of coffee grounds on, and feedlot cattle, and on rumen fermantation and dry matter removal rate, 791
Cows, range
Influence of suckling intensity on reproductive performance of, 342
Cows, straightbred *versus* crossbred. I, 1246
Heterosis from crosses among British breeds of beef cattle: II, 1254
Crossbred lamb production from Columbia and Suffolk ewes
I. Ewe production and lamb traits
II. Simulation of the sheep flock; net return per ewe, 89, 97

D

Dairy heifers
Effect of intramuscular administration of selenium and vitamin E in, on erythrocyte glutathione peroxidase activity and blood selenium levels, 192
Dam, milk yield of
Relationships of, to early growth rate of straightbred and crossbred calves, 584
Deer, white-tailed

Effect of pinealectomy on seasonal androgen titers, antler growth and feed intake in, 435
Detoxification of gossypol in raw cottonseed
And the use of raw cottonseed meats as a replacement for soybean meal in diets for growing-finishing pigs, 865
Diabetes, influence of maternal alloxan
Or insulin injections of fetal glycogen reserves, muscle and liver development of pigs (*Sus domesticus*), 1121
Diet containing fermented straw, a
Responses of weanling meadow voles to, 648
Diets, apple pomace-urea
Ruminal fermentation products and plasma ammonia of fistulated steers fed, 967
Diets, energy in swine
Environmental influence on utilization of, 427
Diets, horse
Use of various quantities and forms of ryegrass straw in, 1287
Diets of young swine, the
Effects of adding inorganic or organic selenium sources to, 456
Dietary Ca, Cu and Zn level, effect of
On body weight gain and tissue mineral concentrations of growing pigs and rats
Dietary levels, comparison of three continuous
Protein levels for bulls: On growth and carcass traits, 29
Digestibility, apparent
Effects of added dietary sodium polyacrylate on passage rate of markers and, by growing swine, 159
Dry matter, *in vitro*
Effects of certain inorganic elements and urea on, disappearance of milo stalks, 561
Drying method
Chemical composition of esophageal-fistula forage samples as influenced by, and salivary leaching, 691
Drying time, oven temperature and
Influence of NPN treatment, on error in determining true corn silage dry matter, 1152

E

Egg yolk diluter
Effect of anti-egg yolk diluent sera upon bovine spermatozoa in, 660
Elfazepam and synovex-S influences
On growth and carcass characteristics of steers fed two dietary energy levels, 1225
Embryos, bovine
Frozen storage and transfer of, 677
Endotoxin, free
Relationship of rumen gram-negative bacteria and, to lactic acidosis in cattle, 1329
Endotoxins, evidence of
In the rumen bacteria of cattle fed hay or grain, 226
Energy evaluation
Of a yeast single-cell protein product for young pigs, 488
Energy intake, dietary
Effect of, on carcass composition and palatability of different weight carcasses from ewe and ram lambs, 1207
Energy-expenditure rate
Of prepartal sows and gilts, 1292
Of sows and gilts during parturition and lactation, 1301
Energy level
Effect of dietary lactic acid content and, or rumen lactate metabolism in sheep, 241
Energy levels, three
Lamb production of Panama and Finn × Panama ewes fed, 336
Energy levels, two dietary
Elfazepam and synovex-S influences on growth and carcass characteristics of steers fed, 1225
Energy source, effect of
Prior to parturition and during lactation on piglet survival and growth and on milk lipids, 883
Prior to parturition and during lactation on tissue lipid, liver glycogen and plasma levels of some metabolites in the newborn pig, 874
Energy sources, a comparison of
For sows and subsequent effect on piglets, 1114
Energy, utilization of
Environmental influence on, in swine diets, 427
Environmental influence
On utilization of energy in swine diets, 427
Equine erythrocyte glutathione system
Lack of effect of selenium supplementation on the response of the, and plasma enzymes to exercise, 492
Erratum, 996
Erythrocyte glutathione peroxidase activity
Effect of intramuscular administration of selenium and vitamin E in dairy heifers on, and blood selenium levels, 192
Esophageal-fistula forage samples
Chemical composition of, as influenced by drying method and salivary leaching, 691
Estradiol and LH
Early changes in serum progesterone, during prostaglandin $F_2\alpha$-induced luteolysis in mares, 666
Estradiol-17β and estrone in blood serum of stallions
Effect of season and artificial photoperiod on levels of, 184
Estrogen and luteinizing hormone secretion
Stimulation of, in postpartum beef cows, 521
Estrogens, effect of
On uterine tone and life span of the corpus luteum in mares, 203
Estrone
Effect of season and artificial photoperiod on levels of estradiol-17β and, in blood serum of stallions, 184
Estrus, synchronization of
With $PGF_2\alpha$ in beef cattle, 999
Evaluation of beef cattle, genetic
Effect of inbreeding on within-herd, 853
Evaluation of pork quality, the
Some factors affecting, 389
Ewe breeds, ram and
Characterization of,
I. Reproductive traits, 106
II. Growth and carcass traits, 114
Ewe, oviduct contractions of the
Quantitative assessment of oxytocin-stimulated by optoelectronic measurements, 914

Ewes, early pregnant
Concentrations of prostaglandins E_2 and $F_2\alpha$ and their relationship to luteal function in, 1314
Ewes
Wool traits of Panama and Finn × Panama yearling and two-year-old, 331
Ewes, Columbia and Suffolk
Crossbred lamb production from,
I. Ewe production and lamb traits
II. Simulation of the sheep flock; net return per ewe, 89, 97
Ewes, Panama and Finn × Panama
Lamb production of, fed three energy levels, 336
Ewes, prepubertal
Pituitary responsiveness following infusion or repeated injections of LHRH-ethlamide in, 235
Excreta, wet caged layer
Performance and health of calves fed, as a protein supplement, 833
Exercise
Lack of effect of selenium supplementation on the response of the equine erthrocyte glutathione system and plasma enzymes to, 492

F

Faculty member and department
What benefits and hazards does international program involvement pose for the, 1195
Farmers, small
Are we prepared to help, in developing countries?, 1184
Fat deposition and fatty acid composition
In the neonatal pig, 497
Fatty acid composition
Fat deposition and, in the neonatal pig, 497
Fatty acids and amino acids
Selected high forage rations and their relationship to beef quality, 1102
Feed efficiency in feedlot lambs, improving
Efficacy of buquinolate in increasing body weight gain and, 15
Feed for ruminants
Evaluation of clarifier sludge as a, 577
Feed utilization
By various types of steers, 1167
Feeding systems
Effects of weaning, and sex of lamb on lamb carcass characteristics and palatability, 622
Feedlot cattle, performance of milking dairy cows and
Coffee grounds. II. Effects of coffee grounds on rumen fermentation and dry matter removal rate, 791
Feedlot performance
Carcass characteristics and meat palatability of steers fed concentrate for short periods, 1109
Effect of protected lipids on, and carcass characteristics of short-fed steers, 270
Fellows, ASAS honorary, 1393
Fescue, Kentucky 31 tall
Influence of supplemental sulfur on *in vitro* and *in vivo* microbial fermentation of, 552
Fleeces, individual
Clean wool determination of, 41
Floor space restriction, effect of
On age at puberty in gilts and on performance of barrows and gilts, 828
Forage crops, conserved
Preservatives for, 721
Forage diets
Carcass and palatability characteristics of beef steers finished on, 1265
Forage intake and lactation, monensin
Of range beef cows, 247
Forage, quality of conserved
Perharvest factors influencing, 712
Forage rations, selected high
And their relationship to beef quality, fatty acids and amino acids, 1102
Forage samples, esophageal-fistula
Chemical composition of, as influenced by drying method and salivary leaching, 691
Forages, harvested
Comparison of Tifton 44 and coastal bermudagrasses as pastures and as, 800
Funding, Title XII
Program considerations for, 1180

G

Genetic analysis
Of postweaning performance of Hereford bulls, 1004
Gestation length
Phenotypic and genetic relationships between calving ease, birth weight and preweaning growth, 595
Gilts in confinement
Age at puberty and ovulation rate in, as influenced by exposure bo a boar, 1141
Gilts, puberty in
Effect of floor space restriction on age at, and on performance of barrows and gilts, 828
Gilts, sows and
Energy-expenditure rate of, during parturition and lactation, 1301
Energy-expenditure rate of prepartal, 1292
Gilts, uterine venous plasma of
Local effect of intrauterine devices on prostaglandin $F_2\alpha$ in, 682
Glacier and high amylose glacier barleys
Comparative nutritive value of, 448
Glutathione peroxidase
Effects of various methods of selenium administration on white muscle disease, and plasma enzyme activities in sheep, 1157
Glycogen reserves, fetal
Influence of maternal alloxan diabetes or insulin injections on muscle and liver development of pigs (*Sus Domesticus*), 1121
GnRH-mediated LH and FSH release in bulls
Testicular steroid secretion in response to 514
Gossypol, detoxification of
In raw cottonseed and the use of raw cottonseed meats as a replacement for soybean meal in diets for growing-finishing pigs, 865
Grasses, pelleted warm season
Relationships among laboratory analyses of, and animal performance, 276
Growth and carcass characteristics

Elfazepam and synovex-S influences on, of steers fed two dietary energy levels, 1225
Growth and carcass traits
Protein levels for bulls: Comparison of three continuous dietary levels on, 29
Growth and reproduction of beef cattle
Phosphorus influence on, 216
Growth and wool traits in Hampshire sheep
Genetic and phenotypic parameter estimates for, 1014
Growth-curve parameters, bovine
Effect of age on estimates of, 352
Growth patterns
In the porcine *cutaneus trunci* muscle, 156
Growth patterns for pelvic dimensions
And other body measurements of beef females, 1080
Growth, preweaning
Phenotypic and genetic relationships between calving ease, gestation length, birth weight and, 595
Growth rate and puberty in females, II.
Heterosis and breed maternal and transmitted effects in beef cattle, 1042
Growth, rate, composition and efficiency of
In lean and obese pigs, 441
Growth rate, early
Relationships of milk yield of dam to, of straightbred and crossbred calves, 584
Growth traits, relationships between
Carcass traits and muscle nucleic acid concentrations in the bovine, 1095

H

Hampshire sheep
Genetic and phenotypic parameter estimates for growth and wool traits in, 1014
Hay grading standards, proposed
Based on laboratory analyses for evaluating quality, 747
Hay of grain, cattle fed
Evidence of endotoxins in the rumen bacteria of, 226
Heifers
Monesin fortified corn supplements in combination with testosterone-estradiol implants and vaginal devices for finishing, on pasture, 1239
Heifers, three-breed cross
Characterization of biological types of cattle. IX. Postweaning growth and puberty of, 843
Hematinic, amino acid-iron chelate
Evaluation of an, for the baby pig, 1135
Hereford bulls
Genetic analysis of postweaning performance of, 1004
Herefore cows
Milk production in.
I. Means and correlations, 131
II. Heritabilities and repeatabilities, 137
Hereford range females
Long-term effects of winter supplement on growth and development of, 805
Heritabilities, estimates of
Relationships between pelvic dimensions, between pelvic dimensions and hip height and, 1089
Heritabilities, estimation of
For weight, height and front cannon bone circumference of thoroughbreds, 1243
Heritability of body size traits
Dressing weight and lipid content in channel catfish, 82
Heterosis
And breed maternal and transmitted effects in beef cattle.
I. Preweaning, traits, 1031
II. Growth rate and puberty in females, 1042
III. Growth traits of steers, 1054
IV. Carcass traits of steers, 1063
Heterosis expression for preweaning traits
Under commercial beef cattle conditions, 370
Heterosis from crosses
Among British breeds of beef cattle: striaghtbred *versus* crossbred cows. I, 1246; II, 1254
Hip height and estimates of heritabilities
Relationship between pelvic dimensions, between pelvic dimensions and, 1089
Honorary awards, ASAS, 1370
Honorary fellows, ASAS, 1393
Hormone, growth
Effect of intracarotid infusion of prostaglandin $F_2\alpha$ on plasma prolactin and, in bulls, 919
Hormone secretion, luteinizing
Stimulation of estrogen, in postpartum beef cows, 521
Hormone, serum luteinizing
Effect of prostaglandin E_2 and $F_2\alpha$ on, testosterone and prolactin in bulls, 923
Horse diets, ryegrass straw in
Use of various quantities and forms of, 1287
Horses
Response of, to sweet, salty, sour and bitter solutions, 51
Housing-management systems
A comparison of one- and two-unit, for gestating and lactating swine, 347

I

Insulin injections of fetal glycogen reserves
Influence of maternal alloxan diabetes or, muscle and liver development of pigs (*Sus Domesticus*), 1121
International program
What benefits and hazards does, development pose for the faculty member and department, 1195
Intracarotid infusion of prostaglandin $F_2\alpha$
Effect of, on plasma prolactin and growth hormone in bulls, 919
Intrauterine devices, local effect of
On prostaglandin $F_2\alpha$ in uterine venous plasma of gilts, 682
Isoelectric focusing technique, improved
Myoglobin heterogeneity in pigs with PSE and normal muscle by an, 1260
Inbreeding, effect of
On within-herd genetic evaluation of beef cattle, 853
Influences, prenatal and postnatal

On testicular growth and development in boars, 374

L

Laboratory analyses for evaluating quality
Proposed hay grading standards based on, 747
Laboratory analyses of pelleted warm season grasses
Relationships among, and animal performance, 276
Lactic acid content, effect of dietary
And energy level on rumen lactate metabolism in sheep, 241
Lactic acidosis in cattle
Relationship of rumen gram-negative bacteria and free endotoxin to, 1329
Lamb carcass characteristics
Effects of weaning, feeding systems and sex of lamb on, and palatability, 622
Lamb production
Of panama and Finn X Panama ewes fed three energy levels, 336
Lambs
Optimum level of monensin for fattening, 788
Lambs and steers
Effects of dietary lipid supplementation on adipose tissue metabolism in, 686
Lambs, ewe and ram
Effect of dietary energy intake on carcass composition and palatability of different weight carcasses from, 1207
Lambs, feedlot
Efficacy of buquinolate in increasing body weight gain and improving feed efficiency in, 15
Lamb, sex of
Effect of weaning, feeding systems and, on lamb carcass characteristics and palatability, 622
(D-Leu^6, des Gly-NH_2 10)-LHRH ethylamide
Pituitary responsiveness following infusion or repeated injections of, in prepubertal ewes, 235
LH, FSH, Prolactin and $PGF_2\alpha$, effects of
On testicular blood flow and testosterone secretion in the ram, 1307
LH, serum progesterone, estradiol and
Early changes in, during prostaglandin $F_2\alpha$ induced luteolysis in mares, 660
Lipid supplementation, effects of dietary
On adipose tissue metabolism in lambs and steers, 686
Litter, size of first
Relationship of age at first farrowing and, to subsequent reproductive performance in sows, 780
Liver development of pigs (*Sus Domesticus*)
Influence of maternal alloxan diabetes or insulin injections on fetal glycogen reserves, muscle and, 1121
Liver glycogen and plasma levels
Effect of energy source prior to parturition and during lactation on tissue lipid, of some metabolites in the newborn pig, 874
Luteal function in early pregnant ewes
Concentrations of prostaglandins E_2 and $F_2\alpha$ and their relationship to, 1314
Luteolysis
Growth hormone, glucocorticoids, prolactin and milk production in lactating dairy cows given prostaglandin $F_2\alpha$, 532
Luteolysis in mares
Early changes in serum progesterone, estradiol and LH during prostaglandin $F_2\alpha$-induced, 666
Lysine level and source interaction
Protein level, in young pigs, 176

M

Mare
A non-surgical technique for the collection of uterine fluid from the, 672
Mares, life span of the corpus luteum in
Effect of estrogens on uterine tone and, 203
Mares, prostaglandin $F_2\alpha$-induced luteolysis in,
Early changes in serum progesterone, estradiol and LH during, 666
Markers, passage rate of
Effects of added dietary sodium polyacrylate on, and apparent digestibility by growing swine, 159
Masonex (hemicellulose extract) effect of
On protein degradation by rumen microorganisms *in vitro* and *in vivo*, 935
Mathematical models
Of postweaning growth, feed intake and carcass composition of beef cattle.
I. Empirical predictive model of voluntary feed intake from weaning to slaughter, 56
II. Estimation of chemical and physical composition of gain for various biological types of cattle, 70
Meadow voles, weanling
Responses of, to a diet containing fermented straw, 648
Meat palatability of steers
Feedlot performance, carcass characteristics and, fed concentrate for short periods, 1109
Meat, toxic and essential trace elements in
A review, 398
Melamine
As a dietary nitrogen source for ruminants, 1338
Memorials, 1411
Metabolism, VFA
In the pig, 479
Metabolites in the newborn pig
Effect of energy source prior to parturition and during lactation on tissue lipid, liver glycogen and plasma levels of some, 874
Microbial fermentation of Kentucky 31 tall fescue
Influence of supplemental sulfur on *in vitro* and *in vivo*, 552
Microbial protein synthesis
Effects of nonstructural carbohydrate, urea and soluble protein levels on, in continuous culture of rumen contents, 944
Milk lipids
Effect of energy source prior to parturition and during lactation on piglet survival and growth and on, 883
Milk production in Hereford cows.
I. Means and correlations, 131
II. Heritabilities and repeatabilities, 137
Milk production in lactating dairy cows given prostaglandin $F_2\alpha$
Luteolysis, growth hormone, glucocorticoids, prolactin and, 532

Milk yield of dam
Relationships of, to early growth rate of straightbred and crossbred calves, 584
Milo stalks
Effects of certain inorganic elements and urea on *in vitro* dry matter disappearance of, 561
Minutes of the 70th annual business meeting, 1362
Monensin
And extruded urea-grain for range beef cows, 262
Forage intake and lactation of range beef cows, 247
Monensin and tylosin
In a high energy diet for finishing steers, 34
Monensin effects on rumen turnover rate
Twenty-four hour VFA pattern, nitrogen components and cellulose disappearance, 255
Monensin fortified corn supplements
In combination with testosterone-estradiol implants and vaginal devices for finishing heifers on pasture, 1239
Monensin, levels of
With and without tylosin for growing-finishing steers, 1
Monensin, optimum level of
For fattening lambs, 788
Muscle nucleic acid concentrations in the bovine
Relationships between growth traits, carcass traits and, 1095
Muscle, porcine *cutaneus trunci*
Growth patterns in the, 156
Myoglobin heterogeneity in pigs
With PSE and normal muscle by an improved isoelectric focusing technique, 1260

N

Neonatal pig, the
Fat deposition and fatty acid composition in, 497
Neonatal survival, porcine
And serum gamma globulins, 1281
News and Notes, 314, 570, 761, 995, 1200, 1416
Nickel, I influence of dietary
On ruminal urease activity. Nickel for ruminants, 1345
Nickel for ruminants
I. Influence of dietary nickel on ruminal urease activity, 1345
Nitrogen adaptation, nonprotein
Intake and eating patterns of steers, 957
Nitrogen components
Monensin effects on rumen turnover rate, twenty-four hour VFA pattern, nitrogen components and cellulose disappearance, 255
Nitrogen, dietary
Melamine as a, source for ruminants, 1338
Nitrogen, non-protein
In range supplements, 765
Nonprotein nitrogen adaptation
Intake and eating patterns of steers, 957
NPN treatment, influence of
Oven temperature and drying time on error in determining true corn silage dry matter, 1152
Northeast Section ADSA-ASAS
Young Scientist Award, 1978, 569
Northeast Section ASAS
Distinguished Service Award, 1978, 760
Nutrient consumption, total digestible
Total digestible nutrient content of consumed forage and, by yearling beef steers grazing nitrogen-fertilized bermudagrass and orchardgrass-ladino clover pastures, 699
Nutritional regime effects
On quality and yield characteristics of beef, 383
Nutritive value, comparative
Of glacier and high amylose glacier barleys, 448
Nylon bag techniques
Comparative cell wall and dry matter digestion in the cecum of the pony and the rumen of the cow using, 209

O

Optoelectronic measurements
Quantitative assessment of oxytocin-stimulated oviduct contractions of the ewe by, 914
Orvus es paste, effect of
On acrosome morphology, motility and fertilizing capacity of frozen-thawed boar sperm, 198
Ova, ovine and bovine
Culture of, 908
Oven temperature and drying time
Influence of NPN treatment, on error in determining true corn silage dry matter, 1152
Ovine and bovine ova
Culture of, 908
Ovulation rate
Age at puberty and, in gilts in confinement as influenced by exposure to a boar, 1141
Oxytocin-stimulated oviduct contractions
Quantitative assessment of, of the ewe by optoelectronic measurements, 914

P

Palatability
Carcass, and retail characteristics of steers and short scrotum bulls, 601
Effects of weaning, feeding systems and sex of lamb on lamb carcass characteristics and, 622
Palatability, carcass composition and
Effect of dietary energy intake on, of different weight carcasses from ewe and ram lambs, 1207
Palatability characteristics, carcass and
Of beef steers finished on forage diets, 1265
Parameter estimates, genetic and phenotypic
For growth and wool traits in Hampshire sheep, 1014
Parameters, bovine growth curve
Effect of age on estimates of, 352
Parturition and lactation
Energy-expenditure rate of sows and gilts during, 1301
Pasture crops, conserved
For finishing beef cattle, 736
Pastures
Comparison of Tifton 44 and coastal bermudagrasses as, and as harvested forages, 800
Pastures, nitrogen-fertilized
Plasma urea nitrogen levels in beef steers grazing, bermudagrass and orchardgrass ladino pastures, 927
Pastures, sod-seeded ryegrass

Evaluation of cow-calf management systems using, 1219
Pelvic dimensions, growth patterns for
And other body measurements of beef females, 1080
Pelvic dimensions, relationships between
Between pelvic dimensions and hip height and estimates of heritabilities, 1089
Performance, calf and cow
Weaning age of Angus heifer calves as a factor influencing, 6
Performance, live animal
And carcass characteristics of beef bullocks and steers, 151
Performance of growing-finishing swine
Effect of bambermycins on, 1233
Performance of Hereford bulls
Genetic analysis of postweaning, 1004
Performance of young weanling pigs
Effects of saline water high in sulfates, chlorides and nitrates on the, 900
$PCF_2\alpha$
Synchronization of estrus with, in beef cattle, 999
Phosphorus
Influence on growth and reproduction of beef cattle, 216
Phosphorus in barley and corn
Apparent digestibility of, for growing swine, 420
Photoperiod, artificial
Effect of season and, on levels of estradiol-β and estrone in blood serum of stallions, 184
Pig, baby
Evaluation of an amino acid-iron chelate hematinic for the, 1135
Pig large intestine, the
VFA production in, 467
Pig, strain of
Compensatory responses to dietary protein, length of starter period and, 893
Pig survival and reproduction
Influence of method of corn storage and vitamin E and selenium supplementation on, 639
Pig, the
VFA metabolism in, 479
Pig, the neonatal
Fat deposition and fatty acid composition in, 497
Pig, the newborn
Effect of energy source prior to parturition and during lactation on tissue lipid, liver glycogen and plasma levels of some metabolites in, 874
Piglet survival and growth
Effect of energy source prior to parturition and during lactation on, and on milk lipids, 883
Piglets
A comparison of energy sources for sows and subsequent effect on, 1114
Pigs and rats, growing
Effect of dietary Ca, Cu and Zn level on body weight gain and tissue mineral concentrations of, 1128
Pigs, growing-finishing
Detoxification of gossypol in raw cottonseed and the use of raw cottonseed as a replacement for soybean meal in diets for, 865
Pigs, lean and obese
Rate, composition and efficiency of growth in, 441
Pigs, nursing
Relationship between yield and composition of sows' milk and weight gains of, 634
Pigs (*Sus Domesticus*)
Influence of maternal alloxan diabetes or insulin injections on fetal glycogen reserves, muscle and liver development of, 1121
Pigs with PSE and normal muscle
Myoglobin heterogeneity in, by an improved isoelectric focusing technique, 1260
Pigs, young
Energy evaluation of a yeast-single-cell protein product for, 488
Protein level, lysine level and source interaction in, 176
Pigs, young weanling
Effects of saline water high in sulfates, chlorides and nitrates on the performance of, 900
Pinealectomy, effect of
On seasonal androgen titers, antler growth and feed intake in white-tailed deer, 435
Pituitary responsiveness in prepubertal ewes
Following infusion or repeated injections of LHRH-ethlamide, 235
Placement, 316, 573, 763, 997, 1201, 1418
Plasma ammonia, ruminal fermentation products and
Of fistulated steers fed apple pomace-urea diets, 967
Plasma enzyme activities in sheep
Effects of various methods of selenium administration on white muscle disease, glutathione peroxidase and, 1157
Plasma of gilts, uterine venous
Local effect of intrauterine devices on prostaglandin $F_2\alpha$ in, 682
Plasma prolactin and growth hormone in bulls
Effect of intracarotid infusion of prostaglandin $F_2\alpha$ on, 919
Plasma urea nitrogen levels in beef steers
Grazing nitrogen-fertilized bermudagrass orchardgrass-ladino pastures, 927
Polyacrylate, effects of added dietary sodium
On passage rate of markers and apparent digestibility by growing swine, 159
Pony, the cecum of the
Comparative cell wall and dry matter digestion in, and the rumen of the cow using *in vitro* and nylon bag techniques, 209
Porcine stress syndrome
Blood creatine kinase as a predictor of the, 630
Pork, muscle composition and eating quality of
Effects of dietary protein and energy levels for growing-finishing swine on performance, 505
Pork quality, the evaluation of
Some factors affecting the, 389
Postweaning growth and puberty
Characterization of biological types of cattle. IX. of three-breed cross heifers, 843
Preharvest factors
Influencing quality of conserved forage, 712
Preservatives for
Conserved forage crops, 721
Preweaning traits, heterosis expression for
Under commercial beef cattle conditions, 370
Products, ruminal fermentation
And plasma ammonia of fistulated steers fed apple pomace-urea diets, 967

Progesterone, early changes in serum
Estradiol and LH during prostaglandin $F_2\alpha$-induced luteolysis in mares, 666
Program considerations
For Title XII funding, 1180
Prolactin and $PGF_2\alpha$, effects of LH, FSH
On testicular blood flow and testosterone secretion in the ram, 1307
Prolactin in bulls
Effect of prostaglandin E_2 and $F_2\alpha$ on serum luteinizing hormone, testosterone and, 923
Prostaglandins E_2 and $F_2\alpha$ concentrations of
And their relationship to luteal function in early pregnant ewes, 1314
Prostaglandin E_2 and $F_2\alpha$ effect of
On serum luteinizing hormone, testosterone and prolactin in bulls, 923
Prostaglandin $F_2\alpha$
Effect of intracarotid infusion of, on plasma prolactin and growth hormone in bulls, 919
Local effect of intrauterine devices on, in uterine venous plasma of gilts, 682
Luteolysis, growth hormone, glucocorticoids, prolactin and milk production in lactating dairy cows given, 532
Protected lipids, effect of
On feedlot performance and carcass characteristics of short-fed steers, 270
Protein and energy levels, effects of dietary
For growing-finishing swine on performance, muscle composition and eating quality of pork, 505
Protein degradation
Effect of masonex (hemicellulose extract) on, by rumen microorganisms *in vitro* and *in vivo*, 935
Protein, dietary
Compensatory resposes to, length of starter period and strain of pigs, 893
Protein level
Lysine level and source interaction in young pigs, 176
Protein levels for bulls
Comparison of three continuous dietary levels on growth and carcass traits, 29
Protein product, a yeast single-cell
Energy evaluation of, for young pigs, 488
Protein supplement, excreta as a
Performance and health of calves fed wet caged layer, 833
Puberty, age at
And ovulation rate in gilts in confinement as influenced by exposure to a boar, 1141
Puberty in females, growth rate and
Heterosis and breed maternal and transmitted effects in beef cattle. II., 1042
Puberty in gilts
Effect of floor space restriction on age at, and on performance of barrows and gilts, 828
Pupa weight and family size of *Tribolium*
Estimates of direct and maternal genetic correlations for, 358

Q

Quality and yield characteristics of beef
Nutritional regime effects on, 383

R

Rabbits, suckling
Body composition in, 166
Ram
Effects of LH, FSH, prolactin and $PGF_2\alpha$ on testicular blood flow and testosterone secretions in the, 1307
Ram and ewe breeds, characterization of
I. Reproductive traits, 106
II. Growth and carcass traits, 114
Range cows, productivity of
Long-term effects of winter supplement on the, 816
Range supplements
Non-protein nitrogen in, 765
Rats, growing pigs and
Effect of dietary Ca, Cu and Zn level on body weight gain and tissue mineral concentrations of
Relationships, phenotypic and genetic
Between calving ease, gestation length, birth weight and preweaning growth, 595
Reports, committee, 1403
Reports from Representatives of the Society, 296, 1408
Representatives of the Society
Reports from, 296, 1408
Reproduction of beef cattle,
Phosphorus influence on growth and, 216
Reproductive performance of range cows
Influence of suckling intensity on, 342
Research, agricultural
In the public market place, 1357
Respiratory rate, changes in
And rectal temperature of swine near parturition, 188
Responses to dietary protein, compensatory
Length of starter period and strain of pig, 893
Rumen bacteria of cattle
Eficence of endotoxins in the, fed hay or grain, 226
Rumen contents, continuous culture of
Effects of nonstructural carbohydrate, urea and soluble protein levels on microbial protein synthesis in, 944
Rumen fermentation and dry matter removal rate
Coffee grounds. II. Effects of coffee grounds on performance of milking dairy cows and feedlot cattle, and on, 791
Rumen lactate metabolism
Effect of dietary lactic acid content and energy on, 241
Rumen microorganisms *in vitro* and *in vivo*
Effect of masonex (hemicellulose extract) on protein degradation by, 935
Rumen turnover rate, monensin effects on
Twenty-four hour VFA pattern, nitrogen components and cellulose disappearance, 255
Ruminal urease activity
I. Influence of dietary nickel on. Nickel for ruminants, 1345
Ruminants,
Melamine as a dietary nitrogen source for, 1338
Ruminants, feed for
Evaluation of clarifier sludge as a, 577
Ruminants, nickel for

I. Influence of dietary nickel on ruminal urease activity, 1345
Ryegrass pastures, sod-seeded
Evaluation of cow-calf management systems using, 1219
Ryegrass straw in horse diets
Use of various quantities and forms of, 1287

S

Salivary leaching
Chemical composition of esophageal-fistula forage samples as influenced by drying method and, 691
Season, effect of
And artificial photoperiod on levels of estradiol-17β and estrone in blood serum of stallions, 184
Selection in beef cattle
III. Correlated response of carcass traits to selection for weaning weight, yearling weight and muscling score in cattle, 142
Selenium administration, various methods of
Effects of, on white muscle disease, glutathione peroxidase and plasma enzyme activities in sheep, 1157
Selenium and vitamin E
Effect of intramuscular administration of, in dairy heifers on erythrocyte glutathione peroxidase activity and blood selenium levels, 192
Selenium sources, inorganic and organic
Effects of adding, to the diets of young swine, 456
Selenium supplementation
Influence of method of corn storage and vitamin E and, on pig survival and reproduction, 639
Selenium supplementation, lack of effect of
On the response of the equine erythrocyte glutathione system and plasma enzymes to exercise, 492
Senior awards, outstanding, 1399
Serum gamma globulins
Porcine neonatal survival and, 1281
Sheep, Hampshire
Genetic and phenotypic parameter estimates for growth and wool traits in, 1014
Sheep, normal and copper-loaded
Intracellular distribution of hepatic copper in, 1174
Sheep, plasma enzyme activities in
Effects of various methods of selenium administration on white muscle disease, glutathione peroxidase and, 1157
Sheep, rumen lactate metabolism in
Effect of dietary lactic acid content and energy level on, 241
Silage, broiler litter
Efficacy of, for beef steers, 544
Sludge, evaluation of clarifier
As a feed for ruminants, 577
Solutions, sweet, salty, sour and bitter
Response of horses to, 51
Sorghum and wheat, corn, barley
Bioassay determination of the biotin content of, 654
Sows
A comparison of energy sources for, and subsequent effect on piglets, 1114
Sows and gilts
Energy-expenditure rate of, during parturition and lactation, 1301
Sows and gilts, prepartal
Energy-expenditure rate of, 1292
Sows, lactating
Attempts to induce conception in, 1145
Sows' milk
Relationship between yield and composition of, and weight gains of nursing pigs, 634
Sows, reproductive performance in
Relationship of age at first farrowing and size of first litter to subsequent, 780
Soybean hulls for swine
Feeding value and digestibility of, 1272
Soybean meal in diets
Detoxification of gossypol in raw cottonseed and the use of raw cottonseed meats as a replacement for, for growing-finishing pigs, 865
Spermatozoa, bovine
Effect of anti-egg yolk diluent sera upon, in egg yolk diluter, 660
Stallions, blood serum of
Effect of season and artificial photoperiod on levels of estradiol-17β and estrone in, 184
Standards, proposed hay grading
Based on laboratory analyses for evaluating quality, 747
Steers, beef
Efficacy of broiler litter silage for, 544
Plasma urea nitrogen levels in, grazing nitrogen-fertilized bermudagrass and orchardgrass-ladino pastures, 927
Steers fed two dietary energy levels
Elfazepam and synovex-S influences on growth and carcass characteristics of, 1225
Steers, growing
Effect of dietary aluminum on animal performance and tissue mineral levels in, 1351
Steers, lambs and
Effects of dietary lipid supplementation on adipose tissue metabolism in, 686
Steers and short scrotum bulls
Carcass, palatability and retail characteristics of, 601
Steers, beef bullocks and
Live animal performance and carcass characteristics of, 151
Steers fed concentrate for short periods
Feedlot performance, carcass characteristics and meat palatability of, 1109
Steers, finishing
Monensin and tylosin in a high energy diet for, 34
Steers, fistulated
Ruminal fermentation products and plasma ammonia of, fed apple pomace-urea diets, 967
Steers, growing-finishing
Levels of monensin with and without tylosin for, 1
Steers, growth traits of
Heterosis and breed maternal and transmitted effects in beef cattle. III., 1054
Steers, intake and eating patterns of
Nonprotein nitrogen adaptation, 957
Steers, short-fed
Effect of protected lipids on feedlot performance and carcass characteristics of, 270

Steers, various types of
Feed utilization by, 1167
Steers, yearling beef
Total digestible nutrient content of consumed forage and total digestible nutrient consumption by, grazing nitrogen-fertilized bermuda-grass and orchardgrass-ladino clover pastures, 699
Storage, frozen
And transfer of bovine embryos, 677
Straw, fermented
Responses of weanling meadow voles to a diet containing, 648
Straw, ryegrass
Use of various quantities and forms of, in horse diets, 1287
Stress, marketing and shipping
Time of processing calves subjected to, 1324
Style and Form Manual, 283
Suckling intensity, influence of,
On reproductive performance of range cows, 342
Sulfur, influence of supplemental
On *in vitro* and *in vivo* microbial fermentation of Kentucky 31 tall fescue, 552
Swine diets
Acceptability and digestibility of, containing corn stored under different conditions, 46
Environmental influence on utilization of energy in, 427
Swine, gestating and lactating
A comparison of one- and two-unit housing-management systems for, 347
Swine, growing
Apparent digestibility of phosphorus in barley and corn for, 420
Effects of added dietary sodium polyacrylate on passage rate of markers and apparent digestibility by, 159
Swine, growing-finishing
Effect of bambermycins on performance of, 1233
Effects of dietary protein and energy levels for, on performance, muscle composition and eating quality of pork, 505
Swine, growing and finishing
Carcass composition changes in, 615
Swine near parturition
Changes in respiratory rate and rectal temperature of, 188
Swine, soybean hulls for
Feeding value and digestibility of, 1272
Swine wates
Production and nutritive value of *Arthrospira platensis*, a spiral blue-green alga grown on, 319
Swine, young
Effects of adding inorganic or organic selenium sources to the diets of, 456
Syndrome, porcine stress
Blood creatine kinase as a predictor of the, 630
Synovex-S, elfazepam and
Influences on growth and carcass characteristics of steers fed two dietary energy levels, 1225
Systems, crossbreeding and management
For beef production, 19

T

Technique, a non-surgical
For the collection of uterine fluid from the mare, 672
Temperature, rectal
Changes in respiratory rate and, of swine near parturition, 188
Testicular growth and development in boars
Prenatal and postnatal influence on, 375
Testicular steroid secretion
In response to GnRH-mediated LH and FSH release in bulls, 514
Testosterone and prolactin in bulls
Effect of prostaglandin E_2 and $F_2\alpha$ on serum luteinizing hormone, 923
Testosterone-estradiol implants
Monensin fortified corn supplements in combination with, and vaginal devices for finishing heifers on pasture, 1239
Testosterone secretion in the ram
Effects of LH, FSH, prolactin and $PGF_2\alpha$
On testicular blood flow and, 1307
Throughbreds
Estimation of heritabilities for weight, height and front cannon bone circumference of, 1243
Tifton 44 and coastal bermudagrasses
Comparison of, as pastures and as harvested forages, 800
Time of processing calves
Subjected to marketing and shipping stress, 1324
Tissue lipid, liver glycogen and plasma levels
Effect of energy source prior to parturition and during lactation on, 874
Tissue mineral concentrations
Effect of dietary Ca, Cu and Zn level on body weight gain and, of growing pigs and rats, 1128
Tissue mineral levels
Effect of dietary aluminum on animal performance and, in growing steers, 1351
Title XII funding
Program considerations for, 1180
Trace elements in meat, toxic and essential
A review, 398
Traits, preweaning
Heterosis and breed maternal and transmitted effects in beef cattle. I., 1031
Tribolium, family size of
Estimates of direct and maternal genetic correlations for pupa weight and, 358
Tylosin in a high energy diet, monensin and
For finishing steers, 34
Tylosin, levels of monensin with and without
For growing-finishing steers, 1

U

Urea and soluble protein levels
Effects of nonstructural carbohydrate, on microbial protein synthesis in continuous culture of rumen contents, 944
Urea, certain inorganic elements and
Effects of, on *in vitro* dry matter disappearance of milo stalks, 561
Urea-grain extruded
Monensin and, for range beef cows, 262
Uterine arterial contractility, altering

Role of the early bovine conceptus and gravid uterus in, 538
Uterine fluid, the collection of
A non-surgical technique for, from the mare, 672
Uterus, gravid
Role of the early bovine conceptus and, in altering uterine arterial contractility, 538

V

Vaginal devices
Monensin fortified corn supplements in combination with testosterone-estradiol implants and, for finishing heifers on pasture, 1239
VFA metabolism
In the pig, 479
VFA pattern, twenty-four hour
Monensin effects on rumen turnover rate, nitrogen components and cellulose disappearance, 255
VFA production
In the pig large intestine, 467
Vitamin E
Effect of intramuscular administration of selenium and vitamin E in dairy heifers on erythrocyte glutathione peroxidase activity and blood selenium levels, 192
Vitamin E and selenium supplementation
Influence of method of corn storage and, on pig survival and reproduction, 639

W

Water, effects of saline
High in sulfates, chlorides and nitrates on the performance of young weanling pigs, 900
Weaning age of Angus heifer calves
As a factor influencing calf and cow performance, 6
Weaning, effects of
Feeding systems and sex of lamb on lamb carcass characteristics and palatability, 622
Weaning traits
Of Angus, Brahman, Charolais and F_1 crosses of these breeds, 366
Weaning traits, birth and
Characterization of biological types of cattle - Cycle II: I., 1022
Weaning weight
Effect of zearalanol on, of male calves, 1203
Weaning weight correction factors
From Angus field data, 124
Weight gains of nursing pigs
Relationship between yield and composition of sows' milk and, 634
Wheat, corn, barley, sorghum and
Bioassay determination of the biotin content of, 654
White muscle disease
Effects of various methods of selenium administration on, glutathione peroxidase and plasma enzyme activities in sheep, 1157
Winter supplement, long-term effects of
On growth and development of Hereford range females, 805
On the productivity of range cows, 816
Wool traits
Of Panama and Finn X Panama yearling and two-year-old ewes, 331
Wool traits in Hampshire sheep
Genetic and phenotypic parameter estimates for growth and, 1014

Y

Yearling, Panama and Finn X Panama
Wool traits of, and two-year-old ewes, 331
Yeast single-cell protein product
Energy evaluation of a, for young pigs, 488

Z

Zearalanol, effect of
On weaning weight of male calves, 1203